1. Introduction

1.1 BACKGROUND

The opinion that prevails in the debate about public enterprise is that public ownership has invariably been a cause of inefficiency and waste. Academic economists are generally more cautious in their pronouncements than politicians or journalists but the final conclusions of most of them tended to point at the same direction.

The framework within which most researchers tended to conceptualise the public versus private ownership question is that of the principal–agent theory. The theory recognises that in both public enterprises and in large private sector companies with diffused shareholdings there is a divorce between control and ownership. The objectives of their managers are typically expected to diverge from those of the companies’ shareholders or those of the voting public (the ultimate owners of the public firms). The managers have to be induced to actively pursue the interests of the public or private firms’ owners by suitable incentives contracts. Such contracts can rarely be optimal because there are information asymmetries between managers and owners. The latter cannot observe (or infer) the managers’ actions, their levels of effort or the contingencies the managers were faced with. Only the ex-post outcomes of the managers’ activities are observable by the owners.

This state of affairs raises the issue of monitoring: incentives contracts must be supervised and a credible system of pressures and sanctions must be in place to ensure that the contract will be enforced. The differences in the systems of monitoring managerial performance arising out of the two types of ownership are at the heart of the argument presented below.

1.1.1 Publicly Owned Companies

In the case of the public enterprise there is a hierarchy of principals and agents. The ultimate principals are the general public and government ministers (and their civil servants) act as the public’s agents. The latter are, in turn, the principals of the enterprises’ managers. The usual assumption is that, in

principle, a public firm maximises directly some social welfare function. This function is often expressed as the sum of the consumers’ and producers’ surpluses and it represents the interests of the public. Governments are assumed to be mainly concerned with their prospects of re-election.

Governments have some political incentives to promote overall economic efficiency. Being able to deliver, for instance, consistently falling electricity prices due to efficiency gains conveys an electorally useful image of administrative competence. However, those incentives are weak. There are considerable informational asymmetries between a government minister and a typical voter. The latter is not able to screen or evaluate the decisions made on his/her behalf by the minister. Furthermore, the sanctions that the individual voter may impose upon the government are limited: his/her vote will have a negligible influence on the outcome of an election and that outcome will not be decided just on the basis of the stewardship of any one publicly owned firm. Thus, the average voter has little reason to acquire costly information about the performance of his/her representatives in monitoring public firms. As a result, the pressure upon the government to pursue his/her interests is minimal.

In addition, governments often have political reasons to deviate from a strategy aiming to achieve maximum internal efficiency. This may be so because the benefits and costs of decisions are not spread evenly throughout the population. A drive to reduce unit costs may adversely affect, say, the workers of a public enterprise while the benefits from lower prices or taxes are spread thinly over large numbers. In such cases, the groups affected by the government’s monitoring activities will have greater incentives to acquire information than the average voter. Their ability to inflict electoral penalties may also be greater. Thus, the government has a clear motive to displace social objectives by political ones and the pressure that the electorate can exert is insufficient to prevent it.

Another factor that may lead to increased costs is the frequent intervention of ministers in the process of managerial decision making. Costs due to disruption of previously agreed plans and confusion of roles will often ensue. Finally, the advice given to ministers by their civil servants and the level of bureaucratic activity may be inefficiently costly.

According to this argument the system of control and monitoring of public enterprises is likely to be grossly ineffective. The verdict is that public ownership may protect the public from the worse abuses of monopoly power but at the price of high internal (that is, cost) inefficiency.

1.1.2 Large Privately Owned Companies with Diffused Shareholdings

It is assumed that the interests of a private company’s shareholders are best served by the maximisation of the company’s expected stream of returns. The
company’s managers are expected to be maximisers of their own utility. This is typically assumed to depend on their income, their level of effort, the security of their tenure in the company and, occasionally, it is assumed to depend on the firms’ growth, the level of their discretionary expenditures and so on. The divergence of interests may be considerable. Yet, the individual investor of a large company with highly dispersed shareholdings has a weak motive to monitor vigorously the performance of his company’s managers. If he does so he will have to bear the full cost of his activity but only a small fraction of the resulting gains. Thus, monitoring activity acquires the characteristics of a public good. Moreover, there may be large economies of scale in obtaining the relevant information. In such a case the cost of monitoring may be prohibitive to the individual investor. Hence, overall monitoring activity will be suboptimally low and the company’s managers will retain considerable discretion to pursue their own objectives.

The monitoring mechanism I have sketched so far does not seem to be much of an improvement over its counterpart in the public sector. However, it is argued that there is a strategic advantage that is specific to private ownership: the transferability of property rights. If the management of a private firm consistently fails to maximise profits, investors in that firm can sell their shares; the notional owners of a public enterprise (that is, the general public) cannot. Heavy selling of a company’s shares by dissatisfied investors will depress the company’s share price. An increase in the deviation of the actual share price from the price associated with profit maximisation increases the probability that the firm’s management will fall victim to a hostile takeover. The takeover threat acts as a deterrent upon the incumbent management and severely limits managerial discretion. Its presence provides strong incentives to the managers to pursue their shareholders’ interests and maximise the market valuation of their company. The existence of the takeover threat is the cornerstone of this argument: it leads directly to the proposition that the effectiveness of the monitoring mechanism associated with private ownership is superior. This proposition rests mainly upon the hypothesis of a well-functioning market for corporate control.

The presumed superiority of private ownership in solving the agency problem leads to the fundamental conclusion of this line of argument: on a priori grounds, a private company doing the same job as a publicly owned one must be expected to be superior from the point of view of internal (cost) efficiency.

3. There are other factors that may limit managerial discretion. They include the influence of non-executive directors and the constraints imposed by the threat of bankruptcy. The former is not as effective as the takeover deterrent. The bankruptcy constraint is effective only in companies with high-gearing ratios that face intense competition and depressed demand conditions.
Public enterprise revisited

It is conceded that, in a non-competitive industry, a private firm’s pursuit of maximum profits will lead to abuses of market power and that allocative efficiency will, consequently, suffer. This is where the theory locates the main trade-off between public and (unregulated) private ownership: given its cost level, a public enterprise is expected to be better in terms of allocative efficiency because it aims to maximise directly social welfare rather than profits. The balance of advantage between private and public ownership depends on whether the gains in internal efficiency are greater or smaller than the gains in allocative efficiency.

The last conclusion is based on the assumption that the private company is not subject to regulation. However, improvements in the allocative efficiency of non-competitive industries do not necessarily require public ownership. They could normally be achieved by privatisation plus regulation. Indeed, it is implied that by entrusting a regulatory authority with the duties of safeguarding the public’s interests the advantages of both worlds may be combined. In that sense, the fundamental conclusion of the above theoretical argument still is that private ownership is the best guarantee of superior internal efficiency.

1.1.3 Evidence

Testing the validity of the claim that private ownership is associated with superior internal efficiency involves considerable difficulties.

First, direct comparisons are possible only if public and private undertakings coexist in the same line of activity. Such coexistence is often unobtainable: in most countries public enterprises are usually monopolies or near monopolies. As a result, most of the detailed cost or multifactor productivity comparisons relate to North America where the two types of ownership tend to coexist in the same industry. Second, simple coexistence of public and private ownership in the same industry is not sufficient. In industries where increasing returns are present, the size distributions of the collections of private and public firms under comparison must be similar to each other. Also, the other dimensions of the output of the firms that are being compared must be appropriately controlled. Finally, it is very difficult to distinguish the effects of ownership per se from the effects of other factors such as

4. Internal efficiency depends upon the total costs of a firm for a given level and composition of output. Allocative efficiency depends upon the firm’s level and structure of output (and the corresponding level and structure of prices) given its cost structure.

5. The studies that are available for countries outside the US and Canada are a patchy collection scattered across countries such as West Germany, the UK, Switzerland and Indonesia.

6. For example, for a proper comparison of a public to a private electricity undertaking a number of their output dimensions must be controlled: differences in the number of users they serve; differences in the size and nature of the geographic area they serve; and differences in quality factors such as security of supply.
Introduction

competition or regulation. In the various studies I am going to refer to below, these difficulties have (or have not) been tackled in different ways. Most of the studies are open to criticism and their conclusions have been frequently modified by subsequent efforts.

A simple enumeration of the existing studies suggests that, on the whole, the conclusion emerging from the theory is correct. The majority of the individual industry studies indicate that unit costs in public firms were generally higher. Yet, if we start making distinctions among sectors and types of industries, the results do not look as unequivocal as the theory suggests.

(a) I shall begin by reporting on some service industries. A good number of studies relating to those industries were reviewed by Borcherding et al. (1982). Nearly half of the studies referred to in that survey involve comparisons of municipally supplied versus privately supplied services. The municipal versus private comparisons cover activities such as: cleaning services, fire protection, refuse collection and slaughterhouses. In addition, studies relating to other service activities such as debt collection, forestry, housing, insurance, weather forecasting and so on, are also reported. The evidence concerning these types of activities indicates: first, that the privately owned firms had, generally, lower cost structures than their public sector opposite numbers; and second, that competition tended to improve the performance of public firms.

7. State activities in the spheres of education, health care and administration are not considered in this study.


9. The survey also includes studies comparing privately owned firms on the one hand and non-profit institutions or co-operative and mutual companies on the other. Those types of ownership are not the concern of this book.

Moreover, the survey reports on studies relating to the Australian airlines, the Canadian railways and the US electricity and water utilities. The coverage of some of those industries is less than comprehensive. The authors fail to mention several studies for the US electricity utilities and one study for the Australian airlines. The conclusions of the omitted studies are at variance with the authors’ contention that the private sector’s efficiency record was uniformly superior.

10. The most intensely researched among the municipally supplied services is refuse collection. The studies that have dealt with it introduce some important nuances into the picture but they do not alter it. Most studies have found that private franchise and contract arrangements were cheaper than direct municipal provision of the service. There are, however, three studies concluding that there were no significant cost differences between municipal and contracted-out provision and one suggesting that the municipal suppliers were more efficient. These aberrant results probably reflect variations in comparative performances or contractual arrangements from area to area. Nevertheless, they seem to be aberrations from a general rule. A more interesting finding of some of those studies was that the unit cost gap between public and private firms tended to close by competitive tendering arrangements. This finding suggests that competition may be a more important factor in determining performance than ownership per se. For references, see: Borcherding et al. (1982); and Millward, R. and Parker, D.M.: ‘Public and
Most of the above activities were labour intensive. Investment in those activities did not require the commitment of particularly large sums and most of their fixed costs were not sunk costs. The scale of operations of their technical units did not need to be large to be efficient. Half of the above comparisons involve municipally controlled companies providing services for which no direct user charge was made. Those municipally controlled companies were compared to mostly small- to medium-sized private sector firms. In the latter the agency problem arising out of the divorce between ownership and control was not likely to be particularly acute.

(b) I shall turn now to the studies involving public enterprises in the manufacturing, utility, transport and communications sectors. As a rule, public enterprises are not scattered randomly across these sectors. They tend to concentrate in industries combining the following characteristics:

- They tend to feature prominently in industries characterised by large economies of scale or scope. They produce very large amounts of relatively undifferentiated goods or services. Their presence is particularly pronounced in network industries.
- They tend to concentrate in some of the most capital-intensive industries. Such industries require large-scale, complex investments with long pay-back periods and most of their fixed costs are likely to be sunk costs.\(^{11}\)

The industries that combine both these features are likely to be dominated by very few (or even one) large companies. Thus, the agency problems of the kind described in the preceding paragraphs are likely to be acute whatever the type of ownership. Furthermore, the scope for competition in such industries is limited, again regardless of the prevailing type of ownership. These were the kind of industries where public ownership was thought to offer its maximum advantage.

- The public enterprises in the manufacturing, utility, transport and communications sectors supply goods and services for which a direct user charge is made. This feature distinguishes them from most of the other publicly supplied services: they do not face the problems associated with the provision of public goods.

The evidence relating to these types of industries is not conclusive. The US electricity industry (where public and private firms coexist) has been re-

\(^{11}\) The postal services are the exception to this rule: they are a labour-intensive network industry.
searched intensively. The majority of the studies (Meyer 1975; Fare et al. 1985; Neuberg 1977; Pescatrice and Trapani 1980) concluded that unit costs were lower in the public firms. The last two authors found the public firms to be more cost efficient even after they had made allowances for the lower cost of capital to which the public utilities had access. They also found that the rate of technical progress in public firms was faster than in private firms. One study (Yunker 1975) found no significant cost differences. Finally, another study (Edison Electric Institute 1985) argues that ownership has little effect on internal efficiency if the proper allowances for the lower input prices facing the public utilities are made.\(^\text{12}\)

Most students of the US water utilities concluded that public firms had higher costs than their private counterparts (Crain and Zardkoohi 1978; Mann and Mikesell 1976; Morgan 1977). However, there is a later paper (Bruggink 1982) that is favourable to the public enterprises on unit cost criteria.\(^\text{13}\)

In a series of comparisons Davies (1971, 1977, 1980) found that labour productivity in Australia’s private airlines was higher than that of the Australian public airlines. However, Forsyth and Hocking (1980), using a presumably better measure of output, show that the productivity differences between the two firms were not significant. Finally, Findlay and Forsyth (1984) found that the costs of British Airways (BA) were higher than those of many other airlines including British Caledonian (the UK privately owned competitor of BA).\(^\text{14}\)

The two Canadian railway companies (the public Canadian National and the private Canadian Pacific) were examined by Caves and Christensen. The resulting relative multifactor productivity estimates led the two authors to argue that: ‘public ownership is not inherently less efficient than private ownership’ (p. 974).\(^\text{15}\)

The inconclusiveness of the above results has prompted survey writers such as Millward and Parker\(^\text{16}\) to conclude that: ‘there is no systematic evidence that public enterprises are less cost effective than private firms’ (p. 258).

Some of the studies mentioned above (for example, Caves and Christensen) arrive at another strong conclusion: that competition (even in the shape of a

---


\(^\text{13}\) For references, see: Millward (1982); Millward and Parker (1983); Vickers and Yarrow (1988); Borcherding et al. (1982).


\(^\text{16}\) Millward and Parker (1983).
Public enterprise revisited

duopoly) has considerable stimulating effects on internal efficiency whatever
the ownership type. It follows that competition may be more important than
ownership per se.

These results cast doubt upon the general validity of the proposition about
the inefficiency of public ownership independently of the type and character-
istics of the industry concerned. In the labour-intensive service activities
where small-sized firms tend to prevail, the private sector seems to provide a
clear cost advantage. In the capital-intensive utility and transport industries
where large indivisibilities are present, the variation in comparative perform-
ance is such that it defies generalisation.17 The intention of this study is to
focus on the core of the public enterprise sector: the capital-intensive indus-
tries of the manufacturing, utility, transport and communications sectors whose
scope often embraces the whole nation.

1.2 MISGIVINGS

Serious doubts can be raised about the validity of several links in the analyti-
cal chain of the argument presented in the last section. I shall concentrate on
four points: (a) the effectiveness of the takeover deterrent; (b) the problem of
risk taking; (c) public enterprise and the influence of interest groups; and (d)
control and accountability of public enterprises.

1.2.1 The Effectiveness of the Takeover Deterrent

The effectiveness of the takeover threat in enforcing discipline upon large
company managements can often be exaggerated. For the mechanism to be
effective in promoting internal efficiency several requirements must be satis-
fied:

1. The probability of takeover must be increasing uniformly as a firm’s
profitability deviates from the profit maximisation norm. If the link be-
tween performance and the probability of takeover is weak, takeover
becomes an indiscriminate threat with potentially negative consequences.
2. The relationship between performance and the takeover threat must be
the same for all companies regardless of their size. If the probability of

17. The distinction made above may explain why the authors surveying the literature disagree
even as to their final verdicts: Borcherding and others have no doubts about the comparative
inefficiency of the public firms while Millward argues that there are no grounds for such a
verdict. The disagreement may be explained by the fact that the former look at the body of
evidence indiscriminately whereas the latter focus on the evidence for the utility and transport
industries. For additional references, see Lawson, C.: ‘The theory of state owned enterprises in
takeover diminishes with the increase in the size of firms the mechanism may become an instrument of promotion of the managers’ interests rather than a means of control on their discretion. Managers have a clear motive to defend their positions by increasing their company’s size through an aggressive acquisitions policy.

3. The post-takeover profitability and market valuation must show an improvement over the pre-takeover situation.
4. The post-takeover increase in profitability or market valuation (if any) must be related to efficiency improvements rather than to an increase in market power.

These subjects have been extensively researched. I shall summarise some of the main findings that relate to the UK experience of the 1950s, 1960s and 1970s. The evidence is by no means conclusive but there are grounds for doubting that any of the above four requirements are met to a satisfactory degree.

Singh (1971, 1975) found that there was a statistically significant inverse relationship between profitability and the probability of takeover. However, he also found that this relationship was non-linear: the likelihood of acquisition was, as expected, highest for firms with profitability records much below the average. The chances of takeover declined as profitability rose closer to the industry average (but still remaining well below it). Beyond that point there was hardly any increase in the chances of survival as profitability kept increasing well above the average. The mechanism was failing to discriminate within a wide range of varying relative profitability records. Singh also found that a surprisingly large number of firms with excellent profitability records had been taken over.

The Singh studies revealed that there was an even more significant negative relationship between a firm’s size and the probability of takeover. The relationship was again found to be non-linear. The likelihood of takeover was about the same for small- and medium-size firms but it was much lower for larger firms. Indeed, beyond a certain (large) size the probability of takeover was found to be declining sharply. For the very large firms (those belonging to the top 100) the takeover threat was extremely low. In short, Singh found that relatively inefficient large firms were safer than much more efficient but smaller companies.

Public enterprise revisited

The above findings are based on comparisons between acquired and non-acquired firms. By turning to a comparison between predators and victims, Singh reinforced further the importance of size as a selection variable. The predators tended to be larger firms; the victims tended to be smaller ones.19

The evidence on the performance of firms after a takeover (or merger) has been approached by two different routes. The first was to use accounting data on profitability and compare the weighted average of the acquiring and target firms’ records prior to takeover with the post-takeover profitability of the merged group. The second approach is based on the examination of share-price movements.20

The two types of studies produce different results. The verdicts of the accounting studies (for example, Meeks 1977) were negative: the profitability of the merged firms was slightly lower than that of the two separate firms before the takeover.21 In contrast, the share-price studies find substantial gains to the shareholders of the target firms around the announcement of the bid. Also, most (but not all) studies found that, over the same period, the share prices of the acquiring firms show only small changes (positive or negative). Thus, the overall returns to shareholders are positive.22

The findings of the share-price studies can be interpreted as evidence of synergistic gains from takeovers. This interpretation has been challenged and its conflict with the results of the accounting studies has been emphasised. It has been argued that the net shareholders’ gains can be attributed to the failure of share prices to reflect fundamental values accurately. The takeover process, according to this view, may simply reveal the incorrect market valuation of the target company and not its inefficiency. Alternatively, since a large fraction of UK takeovers have been of the horizontal type, the shareholders’ gains may reflect increases in market power rather than efficiency improvements.

Cowling et al. (1980) set out to investigate specifically whether there were efficiency improvements attributable to mergers as opposed to gains in mar-

---

19. It should be noted that the evidence Singh’s conclusions rest upon has been derived from the 1950s and 1960s. The takeover wave of the 1980s had some distinct features: very large companies became (both in the UK and, especially, in the US) more vulnerable to unsolicited takeover bids than they used to be. Yet, the non-linear relationship between size and probability of takeover seems to persist: the largest 100 UK corporations still had a far smaller chance of being acquired than those ranked below them (Singh 1992).


The authors found one or two cases (the GEC and ICL mergers) where the merger was followed by efficiency gains. However, the overall verdict from their series of case studies was that: ‘it is difficult to sustain the view that merger is a necessary or sufficient condition for efficiency gain. In many cases efficiency has not improved, in some cases it has declined, in other cases it has improved but no faster than one would have expected in the absence of merger’ (p. 370).

One final point must be made. There is no question that, in the Anglo-Saxon world, the market for corporate control is very active. By contrast, in West Germany, Japan and France the structure of ownership is very different, insider systems of corporate control tend to prevail and hostile takeovers are a genuine rarity. Yet, industries of the latter countries often outperformed their Anglo-Saxon rivals. This reality casts additional doubt on the proposition that an active market for corporate control is indispensable in promoting efficiency.

In summary, the stock market may be an adequate disciplinarian for small- and medium-sized firms whose profitability records are much below the average. There is, however, a substantial body of evidence suggesting that the managers of large companies retain considerable discretion. Furthermore, the mechanism may well have negative implications. Large company managements can defend themselves against the (already weak) takeover threat by methods other than efficiency improvements: They may do so by increasing their firm’s size through acquisitions. They may devote time and resources in building up anti-takeover defences. They may manipulate the signalling properties of dividend pay-outs to bolster share prices. Or, they may ‘play it safe’ by developing a bias against long-term investment commitments.

1.2.2 The Problem of Risk Taking

Principal-agent problems are often formulated in a way that puts the emphasis on the difficulties of monitoring managerial ‘effort’. What is of potentially greater concern, however, is not only effort but the appropriate level of risk taking. Monitoring whether managers are taking too much or too little risk is far more intractable than monitoring effort. Yet, the effects of persistent underinvestment due to the excessively high-risk premia required from long-term investments may be more important than improvements in X-inefficiency. Similarly, the losses due to the irreversibility of a project involving unnecessary risks may be larger than those due to X-inefficiencies.

The prevailing view among the critics of unfettered free markets is that the private sector, at least in the Anglo-Saxon world, tends to undertake too little risk. More specifically, it has been argued that there is widespread bias against long-term investment. In the presence of asymmetric information, both company managers and financial market operators have good reasons to adopt short-termist attitudes and/or require too high rates of return from risky projects.

On the management side, several motives for the adoption of such attitudes have been proposed:

- One set of motives for requiring too high rates of return arises out of the divergence between the interests of shareholders and managers. The standard capital asset-pricing model assumes that shareholders hold fully diversified portfolios which are immune to idiosyncratic (firm-specific) risks. Their interests require them to act neutrally with respect to idiosyncratic risks. The shareholders are concerned only about the systematic risk: the covariance of their portfolio’s risk with that of the market. It follows that a firm promoting its shareholders’ interests must behave in a risk-neutral fashion with respect to its own specific risks. On the other hand, company managements are judged and rewarded on the basis of their firm’s actual performance not the expected value of its returns. They have every reason to act in a risk-averse manner. Thus, they are likely to base their investment decisions on the variability of their own firm’s returns. This leads to the use of higher discount rates and, therefore, penalises projects with more distant pay-offs. In view of the difficulty of transmitting complex technological information from inside the firm to scattered shareholders, the penalties from doing so are likely to be slight. Missed opportunities are less visible than tangible failures.

- With management rewards relating to short-run share price movements companies tend to concentrate on activities likely to increase their stock market value in the short run.

- Finally, it is argued that the fear of unwanted takeover bids can also coerce managers into short-termism. Given the informational asymmetry between investors and managers, high dividends and inflated current earnings can be used by managers to send inaccurate ‘signals’ about their firm’s prospects. The firm’s share price is boosted at the expense of longer-term investment.

The financial markets may also have a short-termist bias:

---

The domination of the stock market by financial institutions may be a cause of such a bias: ‘Since the institutional fund managers’ own performance is often judged on a short-term basis, they are likely to base their decisions on short-term market situations rather than on the long-term worth of the companies’ (p. 13).26

Shleifer and Vishny (1990)27 argued that (in the presence of credit restrictions of the type proposed by Stiglitz and Weiss28) holding assets that cannot stay mispriced for long is cheaper than holding assets that can. Thus, in equilibrium, rational arbitrageurs can be induced to hold long-term assets only if they involve a higher degree of mispricing than short-term ones. Further, the two authors (and others29) argue that company managers tend to ‘internalise’ the arbitrageurs’ attitudes. Since mispricing of claims to long-term investment projects can take a long time to disappear, such projects become less attractive. Indeed, the arbitrageurs’ disfavour to such assets may accentuate their degree of mispricing. Company managers want to avoid that. Hence, short horizons of arbitrageurs lead to short horizons of corporate managers.

Stiglitz (1972) has shown that if investors’ opinions about a project’s prospects are not identical the loans market may become imperfect.30 An individual firm may have to pay higher interest rates as the size of the amount borrowed and, with it, the probability of default, increase. This (other things being equal) may lead to the penalization of the large and indivisible investment programmes which are the ones most likely to involve distant pay-offs.

The above arguments imply widespread deviations of share prices from fundamental values. Such deviations are incompatible with the idea that share prices reflect accurately the best assessments of long-term expected earnings. However, even large and persistent valuation errors are compatible

29. See, for example, Cosh et al. (1990).
with the weak and semi-strong forms of the efficient market hypothesis. The presumption that the stock markets are generally not efficient in the fundamental valuation sense is supported by a large body of evidence. Most (but by no means all) specialists in the field view the strong version of the efficient markets hypothesis with scepticism. On the other hand, most researchers agree that share prices reflect efficiently the information that is already in the public domain.

The question is whether there is any evidence supporting the hypothesis of specific discrimination against long-term projects. Miles (1993) put several alternative formulations of short-termist behaviour to the test. The straightforward interpretation of his results is that the stock market’s valuations of corporations exhibit statistically significant short-termism. Miles found that cash flows accruing further in the future were discounted by factors which were increasingly in excess of the factors that would have resulted from annual compounding.

Projects with only a 6 month time horizon need, on average, to be 5% more profitable than is optimal if companies which undertake them are not to suffer a decline in stock market value; projects with five years to maturity, however, need to be 40% more profitable than is optimal. On even the loosest definition of what constitutes clear sight this counts as serious myopia. Allowing for short-termism only to ‘kick-in’ after 5 years suggests an even greater degree of excess discounting of long term cash flows. … Cash flows accruing more than 5 years in the future are discounted at twice the rate of shorter term flows.

The other relevant study (by Nickell and Wadhwani 1987) also concludes that cash flows accruing further in the future are discounted at suboptimally high rates.

31. It has been shown that the evident inability of market operators to achieve abnormal returns on the basis of publicly available information only is not inconsistent with large valuation errors: the available statistical tests are not powerful enough to reject the hypothesis that the markets are efficient in assessing fundamental values, despite the presence of these errors. Potential speculators are plagued by the same problem: they are no more able to identify such errors than the statistical tests. See Summers, L.: ‘Does the stock market rationally reflect fundamental values?’, *Journal of Finance*, 41(3), July 1986, pp. 591–601.
32. Miles, D.: ‘Testing for short termism in the UK stock market’, *Economic Journal*, 103, November 1993. Miles’s conclusions are based on the experience of the 1980s but there is no reason to suppose that these phenomena appeared for the first time in 1980.
33. Miles is careful to stress that his results can, conceivably, be interpreted as being consistent with market efficiency provided one is prepared to accept as plausible highly variable and sharply increasing risk premia. (His tests were conducted by assuming that risk premia, although variable across companies, were constant over time.) Miles thinks that such an interpretation would be unconvincing: it is not plausible to imagine that such rising risk premia are compatible with a rational assessment of the underlying risk of projects. Thus, short termism remains the most plausible explanation.
Introduction

It seems likely that short time horizons and/or excessively high risk premia for more distant cash flows are not infrequent phenomena. If this is so, then the private sector’s bias against long-term investment constitutes a kind of market failure. This suggests that there is scope for potential improvement. A public enterprise does not have to face the pressures discussed above. It can, if instructed, base its investment policy on discount rates that consist of the risk-free rate plus a premium reflecting the correlation of risks between its own projects and those of the national economy. The question is whether the budget constraint the public enterprises are faced with can be hardened enough to ensure adequate control over their investment expenditures.

1.2.3 Public Enterprise and the Influence of Interest Groups

One of the assumptions of the view of public enterprise presented in Section 1.1 is that governments are facing a completely atomised consuming and taxpaying public. The average voter has no reason to acquire costly information and no chance to exert pressure upon a minister in charge of a public enterprise. Therefore, governments have weak incentives to press for efficiency improvements. On the contrary, they may have stronger motives to pursue their own political objectives or favour better-informed and powerful sectional interests. Both propositions have obvious strengths. They may not, however, constitute a full description of reality.

The consuming and taxpaying public may be less atomised and ineffectual than it is claimed. First of all, there are various classes of consumers and taxpayers. Some of them are highly organised and enjoy considerable lobbying power. The obvious distinction is between domestic and industrial users of the public enterprises’ output. Industrial users do not have as many disincentives as the average voter to acquire information and to monitor the stewardship of public firms:

The goods and services they purchase from public firms often account for a sizeable proportion of their costs. They have reasons to be concerned about their prices. Industrial users belong to associations of employers that maintain research departments. They are able to pool the resources needed to meet monitoring costs, thus avoiding free-rider problems. In the same way they may solve the problems resulting from the presence of economies of scale in the acquisition of information. Finally, there can be little doubt that their ability to exert pressure upon governments is disproportionate to their numerical strength. Industrial interests can influence public opinion and affect the fortunes of parties in various direct or indirect ways. Ignoring evident disparities in political influence and confining ourselves to simple electoral arithmetic may provide a rather restricted view of the political process.
Public enterprise revisited

Industrial users are, of course, mainly concerned with the prices affecting them directly. Hence, they can be expected to concentrate their monitoring activities accordingly. Yet, there is an overlap between their interests and those of the domestic consumers. Industrial users have reasons not to be indifferent to the overall cost levels of the public enterprises they depend upon because most of these enterprises are characterised by joint production and joint costs.

Another group that may be somewhat more compact than others is the taxpayers in the highest-income brackets. Large and systematic losses incurred by public enterprises may well attract this group’s attention.

Domestic consumers and taxpayers in the lower income brackets are clearly too diffused to constitute organised interest groups. Yet, these classes are not necessarily voiceless. For reasons of their own, members of parliament, the press and statutory or voluntary consumer protection pressure groups tend to enlist as ‘champions’ to their cause. The relevant parliamentary committees tend to be particularly sensitive to their interests. Finally, the pursuit of fiscal discipline by the powerful finance ministries allies their interests to those of the taxpaying public. Again, the acquisition of information is undertaken by those who have greater access to it and can collect it more cheaply. Activities ‘on behalf’ of the wider public occasionally amount to highly visible scrutiny of public enterprise performance. They also function as conduits for the transmission of information to the public.

This type of scrutiny varies greatly from country to country. Whenever it is exercised, it cannot be dismissed altogether as irrelevant. For instance, price increases by the public corporations were a major concern of all European governments. In the particular case of the UK, price policy was also a major cause of friction with the corporations’ boards.

The degree of scrutiny exercised on behalf of the consuming and taxpaying public is not inevitably negligible. However, it is a scrutiny reflecting different points of view: each interest group focuses its monitoring activities on the variables (prices, finances, wages, employment) that are its own immediate concern. The question is, what kind of goal formation process results from monitoring by factions?

35. In the UK, for example, statutory consultative consumer councils were attached to all major nationalised industries. Their members, however, were appointed by the government and the councils were considered to be powerless. See, NEDO Report, Appendix volume, 1976, p. 86.

36. This point will be discussed in Subsection 1.2.4. C.

37. Price policy was, according to the corporations’ statutes, the prerogative of their boards. However, all ministers in charge of the corporations were invariably insisting that proposed price changes had to be submitted to them for unofficial approval. See NEDO (1976), Appendix, p. 83.
The second proposition concerns the motives of governments who favour groups liable to be gravely affected by a more rigorous cost-control regime. The obvious example of such a group is the public firm’s employees but this may equally apply to its domestic suppliers.

The account of reality this proposition gives has considerable strength but it is incomplete. Government policies with respect to public firms affect many interest groups at the same time. Typically, the interests of the affected groups are in conflict with one another. Each major policy decision will polarise interest-group coalitions and generate pressures and counterpressures upon the government. The effects of the harm caused to some interest groups due to the favours done to another will have to enter the government’s political calculations. Thus, the influence of a particular sectional interest, if viewed in isolation, may be seen as a cause for deviation from efficiency. Several interest groups, if viewed in their proper juxtaposition to one another, may check and balance one another.

The above argument does not necessarily imply that the conflicting interest groups will balance one another out in such a way as to allow the adoption of an overall efficiency strategy. It simply points out that interest groups do not exercise influence upon governments in isolation from one another. A situation of mutual checks will probably lead to smaller deviations from efficiency than a situation where one group monopolises the government’s favour. Furthermore, it will be a definite improvement over a situation in which the government is free to pursue its own objectives totally unconstrained from any influence.

1.2.4 Control and Accountability of Public Enterprises

The differences between large private and public enterprises have often been exaggerated. Both types of companies are run by managers who do not own them. In both of them, the management at the top has to delegate authority, reconcile conflicts and induce people to achieve the organisation’s goals. The most important differences between them concern the structure of control at the apex of the companies’ decision making. The top managers of a large private firm are subject to limited ex-ante control and the supervision of their actions by their shareholders is also limited. If the shareholders are dissatisfied by the results of these actions they can punish the incumbent management by selling their shares. However, in large companies the takeover threat is credible only in extreme circumstances. The structure of control in public enterprises is different.
Ministerial powers of control and supervision

The formal or informal ministerial powers of control over public enterprises are extensive. The sponsor minister’s formal powers typically include: (i) the power to appoint and dismiss the members of the corporation’s managing board; (ii) the right to approve the major investment decisions and R&D commitments of the public firms; (iii) external borrowings have to be authorised by the sponsor minister and the Treasury. The management of reserves and revenue surpluses are also subject to their approval; (iv) ministers have the power to give formal directions in the national interest; and (v) the power to acquire information: in several European countries (France, Germany, Sweden) civil servants representing the state sit on the enterprises’ boards. In the UK, preoccupation with conflicts of interest and the ‘arm’s-length’ approach to government control prevented the adoption of this practice. However, the British ministers have extensive powers to request information from the boards.

Control over prices and wages is often not among a minister’s formal powers. Nevertheless, experience from all over the world suggests that, even in the absence of formal powers, government ministers tend to deploy all their informal powers of persuasion to establish and preserve their prerogative of prior approval for price and wage changes.

This arsenal of means of control allows governments to have the final word on the enterprises’ strategic decisions. It also allows a good deal of informal influence on the public companies’ operating decisions. It follows that there can be no question about the ability of governments to monitor public enterprises and enforce compliance upon them. Government departments can obtain complex technical information and have the resources to evaluate it. In extreme circumstances ministers can change the companies’ management in ways much simpler than a costly takeover battle. Such powers are beyond the reach of even the most powerful minority shareholders of private companies.

The crucial questions concern the disciplines that governments themselves have to face: can governments be induced to exercise their powers in the...
interests of the wider public or, at least, in ways that could command the public’s consent? Can they be prevented from promoting their narrow political interests or the interests of special groups? Can the exercise of ministerial powers be prevented from becoming too intrusive and, thus, detrimental to entrepreneurial initiative?

### B Public scrutiny

The term ‘scrutiny’ refers to the supervision exercised either by parliament or other official bodies or interest groups or the general public. The object of scrutiny is both the outcomes of the state enterprises’ activities and the ministers’ stewardship of them.\(^{41}\)

The effectiveness of the public scrutiny process rests on its perceived ability: (i) to acquire information and identify problem areas and (ii) to disseminate that information. The first function depends on whether the appropriate institutional structures are in place. The free flow of information to the public domain depends on each country’s policy on publicity and on the freedom enjoyed by its media.

While government control over public enterprises is usually tight, the extent and the quality of public scrutiny of governments varies from country to country.

In authoritarian regimes there is simply no system of public scrutiny. There are no structures to support it and the flow of information to the public is severely restricted. The objectives of government policy towards public enterprises and the influences shaping it are totally opaque.

Parliamentary systems dominated by clientelistic practices tend to produce weak public scrutiny mechanisms. The use of state enterprises for political patronage is accepted as common practice. As a result, governments of all persuasions have no motive to establish structures capable of producing a credible public scrutiny process. In such conditions only cases of gross mismanagement or major corruption tend to be uncovered. The occasional revelations are too unsystematic to constitute a credible monitoring process.

The conditions for effective public scrutiny are much better in more mature parliamentary systems: scrutiny mechanisms of greater sophistication and variety are the product of the normal functions of the system. Below, I shall give a brief sketch of those mechanisms and identify some differences in practice among the most-developed systems. I shall begin with the institutional structures.\(^{42}\)

---

41. The constraints that other government departments impose upon the freedom of action of the sponsoring minister will not be discussed here.

42. The term ‘institutional structures’ includes the state and voluntary bodies, other than the sponsoring department, exercising scrutiny over a given public enterprise.
Accountability to parliament  This type of scrutiny takes the form of questions to the sponsoring ministers or parliamentary debates.

Accountability to parliament’s investigative committees  These committees provide a forum for more informed scrutiny of the state enterprises. In most Western European countries the finances of the public enterprises were being investigated by the public accounts committees of the various parliaments. In some European countries (UK, Austria) the accountability regime was tighter and more focused: in addition to the accounts committees there were committees whose specific purpose was the scrutiny of the state enterprises. The best-known example was the British Select Committee on Nationalised Industries (SCNI).43

Financial and efficiency audits  In several Western European countries the task of in-depth monitoring of the state enterprises was entrusted to permanent institutions such as: in France, La Commission de Verification des comptes des entreprises publiques;44 in Germany, the Rechnungshof (Federal Audit Office) and the regional courts of audit; in Austria, the Federal Audit Office; and in Sweden, the National Audit Bureau.45 These institutions were statutory bodies and they were independent from the government of the day. Their function was to conduct financial and effectiveness and efficiency audits. To do so they conducted periodic investigations of the public enterprises under their jurisdiction and reported to parliament and the government.

UK ‘crisis monitoring’  The British authorities were reluctant to adopt the practice of efficiency audits conducted periodically by permanent institutions. They opted, instead, for a crisis monitoring approach. Crises and problems were to be dealt with as they arose. Persistent malfunctions triggered either the setting-up of a committee of inquiry with wide-ranging powers46 or an ad hoc ministerial referral to an independent investigating body.47 These inquiries were often conducted

43. The SCNI started functioning in 1956 and was replaced in 1979. Despite its limited resources and investigative powers, it produced many in-depth reports on most UK nationalised industries.
44. From 1976 onwards the functions of La Commission were absorbed by Le Cour des Comptes.
46. Committees of inquiry were set up to investigate major strategic issues and financial crises. They were asked to report on the need for major reorganisation of the corporations. Such reports include: the Herbert Report on the electricity industry (1956); the Beeching Report on British Rail (1963); the Edwards Report on air transport (1969). They were also asked to examine problems such as delays in commissioning of electricity power stations (1969).
47. During the 1965–71 period the National Board of Prices and Incomes (NBPI) was asked to play the role of a regulatory authority. Sponsor ministers frequently referred proposed increases in the nationalised industries’ prices to it. In the late 1970s and early 1980s the Monopolies and Mergers Commission was asked to examine the efficiency of several public corporations.
Introduction

in parallel with the select committee’s own investigations.48

- Participation of interested parties The influence of interest groups over the public industries’ affairs tended to vary across countries. In many European countries their representatives sat on the enterprises’ boards. In others the provisions for interest-group representation were more restricted.

The policy on publicity also differed from country to country. In France, for instance, the reports of La Commission de Verification des Comptes were not published. They were available only to ministers and parliamentarians.49 Other countries had adopted more open disclosure policies.

The above sketch reveals that there were differences even among the best-developed mechanisms of public enterprise scrutiny. However, our enumeration of the existing structures also shows that the weaknesses of each country’s mechanism tended to be balanced by its strengths. In the best-structured parliamentary systems, the public enterprise scrutiny mechanisms were reasonably well equipped for their strategic task: to ensure that there was a high probability that shortcomings in the state enterprises’ performance would be identified and disclosed. The necessary conditions for public scrutiny (that is, the ‘production’ of information) were, generally, in place.

C The effectiveness of public scrutiny

The institutions and the bodies referred to above had the right only to scrutinise the performance of the state enterprises. For a number of (mostly sensible) reasons they did not have the power to impose their will. The fate of their recommendations depended on whether the government accepted them.

The exclusive function of public scrutiny is, therefore, to identify problems and make them widely known. Is that sufficient to exert adequate pressure on governments and managers? It turned out that on many occasions it was. The UK experience suggests that recommendations of investigating bodies were often accepted and acted upon.50 Furthermore, the prospect of an intrusive

48. For example, BOAC’s losses during the 1958–63 period triggered two reports by the SCNI (1959 and 1964). This was in addition to the Ministry of Aviation’s own Inquiry (1963). Thus, the pressure on the corporations to improve their performance was coming from many directions.
49. NEDO (1976), Background Paper 2, Appendix F. Nevertheless, the monitoring regime in the 5th French Republic was among the tightest in Western Europe. The emphasis was simply different: the absolute priority of the French system was to inform the governing elites rather than the public.
50. The case of BOAC during the 1959–64 period can serve as an example. By 1956 it became apparent that BOAC’s operating costs were higher than most comparable airlines. A highly critical report of the SCNI appeared in 1959. By 1964, BOAC had achieved an impressive turnaround: it had recorded spectacular productivity gains and its unit costs ranked it
investigation by a permanent or an *ad hoc* agency tended to act as a deterrent on the public enterprises’ management.

It may be argued that the pressures emerging from the political process are sufficient to generate only tactical changes and routine improvements. They may not be enough to generate fundamental changes in priorities, strategies or entrenched practices. If those changes are unwelcome to special interests or the government in office, they will be resisted and the countervailing pressures may be unable to overcome that resistance. There is little doubt that special interests and government political objectives often represent strong inhibiting factors. However, failures to adapt to strategic change are not confined to the public sector. Giant private companies whose management was effectively shielded from scrutiny experienced similar failures: the plight of General Motors in the early 1990s can be attributed to strategies that the company had persisted with for decades. On the other hand, there are several examples of state enterprises (for example, British Steel) that, eventually and despite strong resistance, adapted to strategic change. Strategic failures in large companies of both sectors may arise for different reasons but neither of the two sectors has a monopoly of failure.

Alternatively, it may be argued that the speed of the adjustment is systematically slower in the state enterprises. Again, I fail to see why this is necessarily so. Moreover, it is not certain that the speed of the adjustments that result from the operation of the market are always advantageous to the general public. There are complex interrelationships between large companies and their workers, suppliers, the users of their products and the communities their activities are located in. The dislocation caused by, say, the rapid decline of their operations may impose considerable financial costs on the taxpaying public. The overall costs from such an outcome may be larger than the subsidy required to achieve a more orderly run-down. That the political process allows for the interplay of those interests to influence decision making may help to take those overall costs into account. Again, it is not self-evident that the public sector monitoring process is necessarily inferior.

The advocates of the view that the public sector’s monitoring mechanism is inevitably inferior correctly point out that the individual member of the public has no motive to be informed about the state enterprises’ performance. However, this view underestimates the factors that tend to increase the awareness of at least part of the public. Furthermore, it ignores the factors that tend to reduce the significance of the public’s lack of information. I have already referred to such factors in the present and the last subsections:

The interests of the general public often overlap with the interests of better-informed and influential groups (for example, industrial users). Some of the public’s interests are safeguarded without their knowledge.

There are pressure groups and informed individuals acting as intermediaries on the public’s behalf. Their activities increase the awareness of the public; and they provide a motive to governments and managements to take measures preventing the performance of state enterprises from becoming a political issue.

In mature parliamentary systems the public scrutiny mechanism underpins the monitoring process. It is not necessary for the public to be aware of the detailed observations of an investigative body. The fact that they are in the public domain is often enough. They can become a source of embarrassment to ministers and managers if the performance of a state enterprise deteriorates even further. And competition for ministerial posts is a strong incentive for individual ministers to want to avoid embarrassment.

These factors tend to balance the influence of special interest groups and party political objectives. Their importance varies from country to country and from industry to industry. However, they cannot be presumed as ineffective on a priori grounds.

The second argument that can be put forward in support of the view that treats the public monitoring system as a complete write-off is the following: the voting decisions of the public are determined by a large number of considerations. It is, therefore, unlikely that many voters will be swayed against the government by its mismanagement of a single public industry. Hence, the general public has no credible political sanctions with which to threaten governments for their mismanagement of state enterprises. This is an exaggeration.

The average voter may be affected by a host of factors but his/her voting intentions are determined by his/her overall perception of the government’s suitability for office. This perception is formed from the limited bits of information about the government’s performance that attracted the voter’s attention. The average voter may derive general conclusions from the limited information he possesses.

These factors are more important in state enterprises supplying simple essential goods and services to the population and where many groups have a stake. There, the public, in their capacity as consumers, have direct information about prices and quality of service. In contrast, subsidiaries of complex state-holding companies can be expected to be the least visible. The public is often unaware of their existence. There, the constraints are the quality of the public scrutiny mechanism and the competition with private firms.
For instance, a steep price increase in a public utility’s prices may damage a government’s reputation of competence in handling the economy. Persistent losses that can be attributed to policies biased in favour of a particular group of workers or suppliers or a particular region\textsuperscript{52} may also attract political penalties. They may lead to enduring public perceptions and cause strategic damage to the political parties associated with those policies. Moreover, price increases and deficits may have destabilising effects on a government’s anti-inflation and fiscal policies. The electoral consequences may, again, be severe.

It is true that the costs of such events are spread over the entire population and that the burden to each individual voter may not be large. Yet, if these events are interpreted as typical manifestations of a more general malaise, they can be politically damaging. They may acquire a signalling power disproportionate to the magnitude of their effects on voters’ lives. Politicians have a clear motive to prevent the situation from reaching that point if they can help it.

Finally, politicians do not have complete information either. They do not know which factor will tip the balance of perceptions for or against them. In particular, they do not know the minds of the floating voters, upon which the outcomes of elections often rest. Hence, they cannot take it for granted that the political penalties from the mismanagement of public enterprises will be negligible.

Again, the severity of the sanctions that the public can inflict on politicians differs across countries. Ultimately, it depends on the way a country’s political system functions. Until recently for example, the Italian political system was in effect guaranteeing security of tenure to a specific ruling coalition. In these conditions, the Italian electorate had limited means to influence any policy. But this example cannot be generalised. The electorate (the ultimate recipients of the information produced by the public scrutiny structures) cannot be assumed to be always politically impotent.

**D Size and diversity of the public enterprise sector**

The effectiveness of a monitoring regime is unlikely to remain unaffected by variations in the size and diversity of the state enterprise sector. A large public enterprise sector (or a big increase in its size) is likely to test even the most adequate control and accountability mechanism. Similar problems can be expected to arise with changes in the public sector’s diversity.\textsuperscript{53} This

\begin{footnote}{52. The use of Italy’s IRI (Istituto per la Ricostruzione Industriale) as an instrument of regional policy springs immediately into one’s mind.}
\end{footnote}

\begin{footnote}{53. Beyond a point, size and diversity will affect the ability of government departments to exercise informed control over the firms in their charge: the public scrutiny process is likely to be overwhelmed by the informational requirements of its task; the public will become completely dissociated with the firms managed on its behalf.}
\end{footnote}
remark is relevant to the interpretation of the productivity comparisons that will be presented in Chapters 3 and 4 of this book. The inferences derived from them take the size and diversity of the public enterprise sector as given.

E Conclusions
The two main conclusions of this subsection (1.2.4) are the following:

- The effectiveness of the public sector’s monitoring mechanism depends on factors that differ considerably from country to country. Consequently, conclusions derived from one country may not be applicable to another. For instance, conclusions derived from mature parliamentary systems may not be valid for authoritarian regimes. The effectiveness of the public sector’s monitoring process is a country-specific question.
- The normal operation of a mature parliamentary political process has monitoring capacities that may have been underestimated.

1.2.5 The Property Rights Approach and its Problems: A Summary

The proposition that private ownership can always provide a superior solution to the agency problem rests mainly on the hypothesis of a perfectly functioning market for corporate control. In a less idealised description of reality things are less clear: the takeover threat may not be an effective constraint on managers of large companies operating in non-competitive environments; the private sector probably does discriminate against an entire class of investment projects (those involving distant returns); the public sector’s control mechanisms may be less ineffective than they are supposed; and interest groups aiming to influence state enterprise policies may balance one another.

The misgivings expressed in this section are not an attempt to deny the significance of the agency problem. On the contrary, my aim was to point out that these problems are pervasive and affect both sectors. In such conditions it is not obvious that the problem of control of large firms operating in non-competitive environments is inherently worse in the public sector. The clear definition of property rights seems to be neither a necessary nor a sufficient condition for a satisfactory control of large organisations. The emphasis on property rights and their marketability may deflect attention from more important questions. It may also encourage abstract theorising and neglect of the available evidence.

54. That is, the structures underpinning the public scrutiny mechanism, the potential for shortcomings becoming widely known and, ultimately, the functioning of a country’s political system.
1.3 TWO DISTINCTIVE CHARACTERISTICS OF PUBLIC ENTERPRISE

The formulation of an alternative explanatory framework goes beyond the intentions of this study. Nevertheless, I shall venture a couple of somewhat tentative suggestions. The first is that there are two characteristics specific to public enterprises that may be more important than the transferability of property rights: the existence of direct government control and the ‘softness’ of the state enterprises’ budget constraint. The second suggestion is that large companies, both public and private, can be understood better with the aid of concepts developed by the organisational and the evolutionary theories of the firm. According to these theories:

- Large organisations, public and private, are viewed as coalitions of conflicting interests. Conflicts arise among the main members of the coalition (managers, shareholders, workers, suppliers, customers, government and so on). Conflicts also arise due to the organisation’s hierarchical structure. The complex breakdown of functions and their allocation to many subunits requires extensive delegation of authority and many layers of decision-making power. The firm’s functional units become themselves subcoalitions. Conflict develops both within and among these subcoalitions. The conflicts of interest between the units and the subcoalitions they represent must be reconciled to achieve coordination.

- Large firms do not optimise perfectly defined objective functions. First, they do not have the information needed to evaluate all the available options. Even if this information could be acquired, it would have been so complex that the firm would have been unable to process it. Second, a large firm is a coalition of conflicting interests that have to be reconciled. Bargaining can, in principle, lead to a consensual statement of the firm’s objective function. But bargaining over all the potential alternatives is often an impossibly complex job. Furthermore, complexity and information asymmetries preclude a single centre of power (for example, the firm’s top managers) from being able to induce the other coalition members to adopt its objectives as their own.


56. In the case of private companies, ‘external’ members of the coalition such as customers and suppliers affect the firm mainly through their actions in the marketplace. However, some aspects of the firm’s relationships with major customers or suppliers are governed by implicit contracts based largely on trust. Thus, their interests have to be taken into account.
Introduction

Goal formation is viewed as the result of a formal or informal bargaining process. However, bargaining, as envisaged by these theories, does not result in an all-encompassing objective function. Conflicts about goals are resolved sequentially, one at a time and in isolation from conflicts about other goals. The implication of this is that the organisation is in a state of quasi-resolution of conflict. Latent conflicts among the major participants and inconsistencies in the goals pursued by the organisation’s departments tend to persist.

Goal formation through negotiations does not mean that large firms are in the perpetual turmoil of continuous bargaining and redefinition of their goals. On the contrary, the two theories emphasise that organisations aim for stability, avoidance of disruption and control of uncertainty. Most of their ways of ‘doing things’ are embodied into standard operating procedures and rules. These routines embody two things: the organisation’s ‘memory’ and a state of ‘truce’ among the conflicting interests. Goals agreed in the past are codified into standard procedures much in the same way as agreements between nations are codified into treaties. Some members of the coalition consider such policy commitments as part of their side payments and they often prefer them to cash. Routines are revised only in so far as specific problems or new tasks make their revision an imperative. In the negotiations that ensue the issue is posed in specific terms and most of the remaining structures are taken as given.

The verdict of the two theories I referred to is that organisational slack in large enterprises is inevitable. Imperfect incentives, inflexible ways of doing things and rent-seeking activities are bound to exist in such companies irrespective of ownership. Their strength is that (in some activities) scale confers large technological and other advantages. Slack may be the price they have to pay for resolving conflict and managing uncertainty. It emerges that the two institutional arrangements have much in common. Juxtaposing an idealised norm of a private firm to a realistic portrayal of a public one may be misleading.

The two distinctive characteristics of public enterprise that I consider as crucial will be discussed with the aid of the concepts I have just presented.

57. ‘Routines’ is the all-encompassing term preferred by Nelson and Winter (1982).
58. According to Herbert Simon: ‘The conclusion that organisations motivated by profits will be more efficient than other organisations does not follow in an organisational economy from the neoclassical assumptions. If it is empirically true, other axioms will have to be introduced to account for it’ (quoted from Stiglitz 1994, p. 234) [Original article: Simon, H.A.: ‘Organisations and markets’, Journal of Economic Perspectives, 5, pp. 25–44. Quotation from p. 28.]
1.3.1 Direct Government Control

A large public enterprise is a coalition of conflicting interests as much as a private one. In that sense, the nature of the analytical problem remains the same. There is an important difference, however. Public ownership allows governments to affect directly (rather than through fiscal or monetary measures) the major decisions of the enterprise. Direct government control alters the enterprise’s goal formation process. This does not happen through the adoption of a social welfare function instead of a profit-maximisation criterion. It is the result of a change in the balance of power at the top of the enterprise’s decision making:

- Public ownership alters the membership of the coalition that constitutes the firm. It generally removes an entire class of stakeholders, namely the firm’s shareholders. The government (and the taxpaying public) take their place.
- Public ownership alters the balance of bargaining power among the other members of the coalition. First, ultimate decision-making power is no longer the exclusive prerogative of the top-level management of the firm. It is shared between the top managers and the sponsoring minister. Second, government control provides an additional channel of influence to the remaining members of the coalition: workers, domestic and industrial customers, suppliers and local communities that are directly affected by the enterprise’s activities. Under private ownership these groups can influence a large company through their actions in the marketplace and their ability to impose policy commitments upon its management. Public ownership provides an additional channel: these groups can affect the public firm’s affairs through their political influence upon the government.

In the goal-formation process emerging from these arrangements the role of the government is central. The government is the arbiter of the game and it has the responsibility to initiate or sanction some resolution of the conflict. This will typically take the form of a compromise solution balancing in one way or another the conflicting goals of the coalition members. Thus, the government becomes the focal point of the opposing pressures. At the same time, the government is a participant with interests of its own.

To discuss the factors affecting the way compromise solutions are arrived at I assume that conflicts about goals are resolved sequentially and relate to specific ‘problems’. As a ‘problem’ arises a constellation of subcoalitions of the interested parties develops around it. The compromise solution that the government will decide upon will be affected by the following factors:
1. The relative bargaining power of the various interested parties *vis-à-vis* the government.\(^{59}\) If on a particular issue the bargaining position of an interest group is strong and not balanced by opposing pressures, the government’s compromise solution can be expected to be heavily biased in its favour. If the government’s decision is likely to be visible by the dispersed consuming and taxpaying public, the government has a strong motive to favour the general public.

2. The government will also take into account the implications of its decisions on its own macroeconomic objectives.

3. The gravity of the effects of a government decision on the participants and the possibility of disruption may also be taken into account. Whenever strong negative pay-offs to a coalition member (for example, redundancies) are involved, a government-inspired compromise becomes more difficult to impose and less stable. Indeed, there are industries which involve systematic negative pay-offs to some of the coalition members. The nature of the economics of such industries implies acute conflict of goals and interests that are often irreconcilable. The clearest example is that of the declining industries: capacity can be preserved only at the expense of mounting losses. On the other hand, there are industries (for example, the expanding industries) where conflict is normally not acute and consensus is easier to achieve. Below I shall argue that there are systematic differences in behaviour and performance between the ‘consensus’ and the ‘conflict’ nationalised industries.

In weighing the above considerations governments are not (as we have seen in the last section) unconstrained. They are restricted to a larger or smaller extent by the monitoring mechanism they will have to face and by the attitudes of their electorate on issues of taxation and subsidies.

Finally, it must be stressed that conflict remains latent for most of the time. It is attenuated by embodying agreed principles and goals into standard procedures and rules. The pricing rules a state enterprise adopts are an example of how conflict about who is going to bear the costs of the enterprise’s operations can be resolved by an accepted procedure.\(^{60}\)

\(^{59}\) The bargaining power of the special interest groups (workers, suppliers, industrial users, local interests) depends on: their position in the economy; their political influence; and whether they represent political constituencies of the government in office to which prior policy commitments have been made.

\(^{60}\) The pricing rule that a state enterprise adopts is significant for its distributional as much as its allocative implications. The rule selected (for example, marginal or average cost pricing) determines how the costs of the enterprise will be borne by the various classes of consumers or the taxpayers. Furthermore, such rules can be an indispensable shield in fending off continual pressures on the state enterprises to favour special interests. In that sense, any accepted proce-
Public enterprise revisited

The goal-formation process described above implies that from time to time governments superimpose specific tasks upon the state enterprises’ normal operations. Such tasks are unprofitable and they cannot normally be imposed on private firms. These tasks are incorporated in the same sequential way as new tasks are incorporated in the operations of private firms.

Direct government control implies a different structure of decision making. It also implies that state enterprises undertake tasks that private firms would not accept. However, the implications from the point of view of social welfare or cost efficiency are not clear.

It can be argued that most of the tasks that public enterprises undertake on ‘social grounds’ are rent-seeking activities of special interests. Interest groups simply divert to themselves resources that could have been used more productively elsewhere. This is not necessarily so. The additional channel of influence that public ownership provides may be helping to take into account genuine external effects. Moreover, we have good reasons to believe that large private companies are far from being immune to rent seeking.

It can be argued that the rapid accumulation of additional social tasks disrupts the public enterprises’ system of operations. This is clearly possible. But it is equally plausible to assume that the new tasks will be absorbed smoothly and incorporated into the enterprise’s routines.

Public ownership shifts the balance of power away from a firm’s top management. It may be argued that this shift loosens the management’s grip on the workforce. However, the same shift may mollify confrontationalist attitudes and limit the management’s discretion in the pursuit of their own interests.

Finally, it has been argued that constraints associated with the public sector (restrictions on the incentive schemes that may be employed and the salaries that may be paid, civil service job security assurances) lead to a more lax internal control regime than that of the private sector. These limitations are not inherent features of state enterprises. Most European public firms do not function as government departments and they are not subject to civil service constraints.

It emerges that direct government control as such is not inherently tantamount to inefficiency. We have no a priori reasons to assume that – given the same tasks – the private sector would have necessarily performed more efficiently. To decide whether this is true or not we need detailed information.

dure for solving the issue of the distribution of costs among consumers is better than no rule at all. See Shepherd, W.G.: *Economic Performance under Public Ownership: British Fuel and Power*, Yale University Press, New Haven, CT, 1965, pp. 42 and 139. Such tasks may be the preservation of a loss-making rail route, the supply of electricity to a remote area at no higher price, a capital procurement policy favouring domestic suppliers and so on.
Without such information it is easy to misinterpret the effects of the different goals that public enterprises pursue as cost inefficiency. It is the softness of the public enterprises’ constraint that – if left unchecked – may have deleterious effects on their efficiency.

1.3.2 Soft Budget Constraints

Public enterprises are immune to the disciplines of the financial markets. First, they do not have a share price to defend. Second, they do have a softer budget constraint than private enterprises: the threat of liquidation is very remote. Public firms can sustain losses for indefinite periods without going bankrupt.

I have argued that in the case of large companies with strong market positions the stock market may not be a particularly good disciplinarian. Thus, the immunity of state enterprises to the stock market pressures may have little bearing on their cost efficiency.

Indeed, if the hypothesis that the markets tend to discriminate against large long-term investments (see Subsection 1.2.2) is correct, the stock market discipline may become a liability. Short-termism will induce the private sector to keep the capital intensive/large indivisibilities and sunk costs industries undercapitalised. In contrast, the state enterprises operating in such industries are free from the pressures leading to short-termist attitudes. They are, therefore, in a good position to correct that market failure by adopting investment strategies that are neutral with respect to idiosyncratic risks. The effect of this may be superior gains in dynamic efficiency. Thus, in the case of industries with the above features the state enterprises’ immunity from the stock market disciplines may be a potential advantage over the private sector. In the presence of short-termist attitudes the performance of the public sector in those industries may be – in the long run – an improvement over what the private sector could achieve.

The softness of the state enterprises’ budget constraint is probably the critical issue. The remoteness of the bankruptcy threat has a greater bearing on whether public enterprises are run efficiently or not. It means that public enterprises can, in principle, sustain losses indefinitely by borrowing either from the state or with an explicit or implicit government guarantee.

A perception by the interested parties that the government is unwilling to harden the budget constraint of a public firm will affect the firm’s internal discipline from top to bottom. I concluded the subsection on direct government control by saying that there is no a priori reason to assume that – given the same tasks – the private sector would have performed more efficiently. This is correct in the sense that we do not know in advance how soft a public firm’s budget constraint is going to be. However, a widespread anticipation
that the state will bail a firm out whatever happens and without further consequences may become the single factor that will generate all the unwelcome consequences I mentioned above. It will encourage the proliferation of rent-seeking activities; it will lead to a lax internal control regime and it will encourage reckless investment initiatives.

On the other hand, the state enterprises’ budget constraint can be and often is credibly hardened. The level of subsidies for uneconomic social tasks can be contained by prespecified cash limits. Unsuccessful investment initiatives can be singled out for specific monitoring to establish whether their failure arose out of manifestly unexpected bad luck. A gradation of sanctions, including the threat of liquidation or privatisation, can be devised. As long as a government is able to take credible measures to stiffen the budget constraint, state firms in the ‘heavy’ infrastructure industries may have positive contributions to make.

Whether a budget constraint can be hardened with sufficient credibility is an open question that cannot be answered in advance. The softness of the budget constraint is not an inherent feature of public enterprises in the way transferability of property rights is. It is a matter of degree and it depends on the effectiveness of the scrutiny that the government itself has to face.

1.4 THE STUDY’S POINT OF DEPARTURE

The object of the preceding sections is to justify the position that represents the point of this study’s departure. With respect to the comparative advantages of the public versus private ownership the position of this book is agnostic and empirical. The view taken here is that the merits or demerits of public enterprise may differ from country to country, industry to industry and historical period to historical period. The purpose of the inquiries into these areas is to identify the types of activities in which the public sector has shown some merit and the activities in which it has shown no merit at all.

This book confines itself to the study of a particular country, a particular set of public industries and a particular historical period.

- The country in question is the UK. The UK benefits from a system of scrutiny of public enterprises that is (despite the criticisms that have been frequently levelled against it) more effective than that of most countries.
- The focus is on public enterprises operating in the manufacturing, utility, transport and communications sectors. In particular, the only public industries that have been considered are those that combine two characteristics: capital intensity and large-scale economies. These are
industries whose efficient scale of operations requires mass production of more or less standardised goods or services. In such industries the scope for competition is limited and their structure is centralised whatever the prevailing ownership regime. The choice of capital intensity and scale economies as selection criteria is deliberate: these are the types of industries where the public sector is likeliest to have a positive contribution to make. As we shall see below, these two criteria permit us to conduct meaningful comparisons between the record of the public industries to the record of private industries that share these characteristics.

- The study covers the 1954–79 period. The year 1954 was near the peak of the economic cycle for which detailed Census of Production data were available. Furthermore, 1954 was the year in which the post-war restrictions were relaxed. The year 1979 was also the peak year of the late 1970s and, it will be agreed, it represents the end of an era.

It goes without saying that the conclusions derived from this study may be irrelevant to other countries or other historical periods.

The ambitions of this book are much more modest than this introduction may have so far suggested. This is not a study about cost efficiencies. For reasons that will be explained below no attempt has been made to estimate multifactor productivities. The main aim of this study is to compare the labour productivity record, both intertemporally and in relation with the US, of a number of UK public and private sector industries that share a number of common characteristics.

1.5 UK PUBLIC ENTERPRISE IN THE 1950s, 1960s AND 1970s

The commonly held opinion about the UK public enterprises is that they have been an unmitigated failure. Two factors contributed to the perception that the UK public enterprise was invariably inefficient.

The first factor was the low overall profitability of the UK nationalised industries. Table 1.1 shows that the rate of return in the private sector was 2.5


Public enterprise revisited

Table 1.1 Profitability of public corporations and of industrial and commercial companies (percentages)

<table>
<thead>
<tr>
<th>Year</th>
<th>Including subsidies¹</th>
<th>Net of subsidies²</th>
<th>Private companies³</th>
</tr>
</thead>
<tbody>
<tr>
<td>1970</td>
<td>6.4</td>
<td>5.6</td>
<td>16.8</td>
</tr>
<tr>
<td>1971</td>
<td>6.0</td>
<td>5.3</td>
<td>16.8</td>
</tr>
<tr>
<td>1972</td>
<td>6.2</td>
<td>4.6</td>
<td>18.5</td>
</tr>
<tr>
<td>1973</td>
<td>6.2</td>
<td>4.3</td>
<td>18.7</td>
</tr>
<tr>
<td>1974</td>
<td>4.9</td>
<td>2.4</td>
<td>17.2</td>
</tr>
<tr>
<td>1975</td>
<td>4.9</td>
<td>3.1</td>
<td>14.6</td>
</tr>
<tr>
<td>1976</td>
<td>6.2</td>
<td>4.8</td>
<td>15.6</td>
</tr>
<tr>
<td>1977</td>
<td>6.2</td>
<td>4.9</td>
<td>17.8</td>
</tr>
<tr>
<td>1978</td>
<td>5.7</td>
<td>4.4</td>
<td>17.1</td>
</tr>
<tr>
<td>1979</td>
<td>5.0</td>
<td>3.6</td>
<td>18.3</td>
</tr>
</tbody>
</table>

Notes:
1. Gross trading surplus as a percentage of net capital stock at replacement cost.
2. Gross trading surplus minus subsidies.
3. Gross trading profit as a percentage of net capital stock at replacement cost.

Source: Vickers and Yarrow (1988), Table 5.4, p. 143.

to 3.5 times higher than the return (including subsidies) of the public corporations.⁶⁴

Nevertheless, it can be argued that to public enterprises profit was not an objective but a constraint taking the form of a financial target. It may not be, therefore, legitimate to evaluate the public corporations’ performance in terms of an objective they were not supposed to pursue.⁶⁵ Indeed, given the monopoly position of most of them a higher rate of return would not have meant much.

The second factor was the tensions that developed in the 1970s (especially during the period of price restraint) between government departments and the state industries’ boards. The 1976 NEDO Report⁶⁶ identified major shortcom-

---

64. The figures of Table 1.1 refer to the 1970–79 period. In the 1950s the profitability of the nationalised industries compared to that of the private sector seems to have been even worse. See Millward (1982, Annex, Figure 4A.3).
65. The nationalisation statutes required for them to break even.
ings at the heart of the nationalised industries’ decision-making process. The report discovered: confusion of responsibilities between ministers and boards; lack of policy continuity and government intervention based on short-term expediency; and no effective system for measuring industry or managerial performance. These were, indeed, major problems and the high public visibility of the nationalised industries ensured that they were revealed. However, all systems of control have imperfections. Ultimately, what matters is the public enterprises’ performance record in comparison to that of the private sector.

The comparative performance of the UK public enterprises has not been examined as intensively as one might have expected. Up to a point this is understandable. The major publicly owned companies in the UK were public monopolies or near monopolies. There are few opportunities to compare private and public firms engaging in similar lines of activities. Hence, cost structure or multifactor productivity comparisons of the type conducted for the US electricity and water utilities and the Canadian railways are not feasible.

Some research on peripheral activities such as the sale of electricity and gas appliances or activities such as ferries was conducted by Pryke (1982). He concluded that the private firms were more efficient than their public sector rivals but his methods were criticised and his conclusions challenged. Rowley and Yarrow (1981) found a slight deterioration in the productivity performance of the British steel industry after its nationalisation in 1966. However, their sample period ends in 1975, before the dramatic improvements in productivity that occurred (under public ownership) from the late 1970s onwards. Finally, Findlay and Forsyth (1984) found that the costs of BA were higher than those of British Caledonian. Their study refers to 1980 which may have been a particularly unfavourable year for BA. Its performance, too, had shown large improvements in the run-up to its privatisation. This list practically exhausts the research that is available in relation to activities in which public firms were in direct competition with private sector rivals. Not much can really be made out of these studies.

It emerges that the UK experience offers very few opportunities for comparing like with like. Thus, a public versus private comparison must involve different industries. This leaves us with the need to find a legitimate measuring rod of comparative performance.

Productivity (multifactor or labour) is a criterion that obviously suggests itself. Comparing productivity levels (for example, value added per em-

67. For references, see: Millward (1982); Millward and Parker (1983); Vickers and Yarrow (1988).
70. For references, see Ashworth and Forsyth (1984).
ployee) of different industries may well be meaningless. The variations in the market and technological conditions under which different industries operate are too big to allow legitimate comparisons. However, comparisons of changes in productivity over time may be more meaningful. Thus, public and private sector industries can be compared to each other in terms of their intertemporal productivity growth rates. International productivity comparisons can be even more useful. International productivity ratios of UK industries to their counterparts in third countries can be obtained. Then, the public versus private comparisons can be conducted in terms of the size and evolution of their productivity gap with the industries in these countries. Admittedly, the results of such comparisons will be indicative rather than conclusive.

The concern of this study is with the developments in the productivity front that took place during the 1954–79 period. Intertemporal estimates of productivity growth during that period can be found in three studies. A set of estimates is available from one of the papers accompanying the NEDO Report. Another two sets have been compiled by Pryke (1971, 1981). All three studies provide both labour and total factor productivity estimates for the major nationalised industries. All three of them compare the performance of the nationalised industries with the manufacturing average.

Table 1.2 Productivity: annual trend percentage changes, 1960–75 (NEDO)

<table>
<thead>
<tr>
<th>Industry</th>
<th>Output %</th>
<th>Output per employee %</th>
<th>Total factor productivity %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gas</td>
<td>7.4</td>
<td>8.9</td>
<td>5.1</td>
</tr>
<tr>
<td>Telecommunications</td>
<td>9.9</td>
<td>7.7</td>
<td>6.4</td>
</tr>
<tr>
<td>British Airways (1960–74)</td>
<td>11</td>
<td>7.1</td>
<td>7.2</td>
</tr>
<tr>
<td>Electricity (England and Wales)</td>
<td>4.7</td>
<td>6.3</td>
<td>1.7</td>
</tr>
<tr>
<td>British Rail (1963–75)</td>
<td>0</td>
<td>5.8</td>
<td>na</td>
</tr>
<tr>
<td>National Freight Corporation</td>
<td>–4.5</td>
<td>2.1</td>
<td>na</td>
</tr>
<tr>
<td>(NFC) (1969–75)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coal</td>
<td>–4.3</td>
<td>1.7</td>
<td>na</td>
</tr>
<tr>
<td>Nationalised buses (1969–75)</td>
<td>–2.2</td>
<td>1.1</td>
<td>na</td>
</tr>
<tr>
<td>Postal services</td>
<td>–0.5</td>
<td>0.4</td>
<td>na</td>
</tr>
<tr>
<td>British steel (1968–75)</td>
<td>–3.9</td>
<td>–1.4</td>
<td>–3.4</td>
</tr>
<tr>
<td>Manufacturing (1960–75)</td>
<td>2.7</td>
<td>3.4</td>
<td>2.3</td>
</tr>
</tbody>
</table>

Source: NEDO, Background Paper 3 (1976), Table 2.7, p. 24.

71. NEDO (1976), Background Paper 3: ‘Output, investment and productivity’.
The NEDO study covers the 1960–75 period. Table 1.2 presents the annual trend percentage changes in output and productivity. The contents of the table give rise to several observations:

1. Both the labour and the total factor productivity growth (TFP) trends indicate the existence of wide performance disparities among the nationalised industries. Labour productivity growth was much higher than the manufacturing average in five industries and lower in the remaining five. TFP growth was higher than that of manufacturing in three industries and lower in two.

2. The crude unweighted average of the ten nationalised industries’ labour productivity trends is 4 per cent per annum. The trend growth rate of manufacturing was 3.4 per cent.\footnote{A properly calculated labour productivity growth trend for the ten nationalised industries would have been higher than 4 per cent because of the larger weight of the gas, telecommunications, electricity and railway industries.}

3. The labour productivity growth trend of all the expanding state industries

Table 1.3  Productivity: annual average growth rates, 1948–68 (Pryke)

<table>
<thead>
<tr>
<th></th>
<th>Output %</th>
<th>Output per man-hour %(^1)</th>
<th>Output per unit of capital and labour %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public airlines</td>
<td>13.5</td>
<td>11.4</td>
<td>8.4</td>
</tr>
<tr>
<td>Telecommunications (1963–68)(^2)</td>
<td>8.9</td>
<td>6.7</td>
<td>5.0</td>
</tr>
<tr>
<td>Electricity</td>
<td>8.0</td>
<td>6.3</td>
<td>3.4</td>
</tr>
<tr>
<td>Gas</td>
<td>3.0</td>
<td>3.6</td>
<td>2.2</td>
</tr>
<tr>
<td>BRS: Road services (1950–68)</td>
<td>–0.7</td>
<td>3.1</td>
<td>na</td>
</tr>
<tr>
<td>Coal</td>
<td>–1.5</td>
<td>2.8</td>
<td>1.7</td>
</tr>
<tr>
<td>Railways</td>
<td>–1.2</td>
<td>2.3</td>
<td>1.1</td>
</tr>
<tr>
<td>Postal services (1963–68)(^2)</td>
<td>–0.2</td>
<td>–0.2</td>
<td>na</td>
</tr>
<tr>
<td>Nationalised buses</td>
<td>–2.0</td>
<td>–1.0</td>
<td>na</td>
</tr>
<tr>
<td>Public enterprise sector(^3)</td>
<td>1.5</td>
<td>3.4</td>
<td>na</td>
</tr>
<tr>
<td>Manufacturing(^4)</td>
<td>3.4</td>
<td>2.8</td>
<td>2.0</td>
</tr>
</tbody>
</table>

Notes:
1. The statistics for railways and buses (prior to 1963) reflect output per man-years.
2. Derived from Pryke’s second study, Tables 9.1 (Post) and 10.1 (Telecom.).
3. Excluding Post and Telecom.
4. In the case of the TFP calculations the manufacturing average excludes textiles. It is not quite clear why.

Source: Pryke (1971), Tables: 3 (p. 17), 4 (p. 20) and 9 (p. 112).
Table 1.4  Productivity: annual average growth rates, 1968–78 (Pryke)

<table>
<thead>
<tr>
<th>Industry</th>
<th>Output %</th>
<th>Output per man-hour %</th>
<th>Output per unit of capital and labour %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gas</td>
<td>6.2</td>
<td>8.5</td>
<td>na</td>
</tr>
<tr>
<td>Telecommunications</td>
<td>8.6</td>
<td>8.2</td>
<td>5.2</td>
</tr>
<tr>
<td>British Airways</td>
<td>9.0</td>
<td>6.4</td>
<td>5.5</td>
</tr>
<tr>
<td>Electricity</td>
<td>2.1</td>
<td>5.3</td>
<td>0.7</td>
</tr>
<tr>
<td>National Freight Corporation</td>
<td>–2.4</td>
<td>2.7</td>
<td>na</td>
</tr>
<tr>
<td>Railways</td>
<td>–1.9</td>
<td>0.8</td>
<td>na</td>
</tr>
<tr>
<td>British Steel</td>
<td>–3.0</td>
<td>–0.2</td>
<td>–2.4</td>
</tr>
<tr>
<td>Nationalised buses</td>
<td>–3.9</td>
<td>–0.5</td>
<td>–1.4</td>
</tr>
<tr>
<td>Coal</td>
<td>–4.4</td>
<td>–0.7</td>
<td>–1.35</td>
</tr>
<tr>
<td>Postal services</td>
<td>–1.2</td>
<td>–1.3</td>
<td>na</td>
</tr>
<tr>
<td>Public enterprise</td>
<td>0.9</td>
<td>2.9</td>
<td>na</td>
</tr>
<tr>
<td>(unweighted averages*)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total manufacturing</td>
<td>1.0</td>
<td>2.5</td>
<td>1.5</td>
</tr>
<tr>
<td>Manufacturing (excl. British Steel)</td>
<td></td>
<td>2.7</td>
<td>1.7</td>
</tr>
</tbody>
</table>

Note: * A weighted average of the ten industry productivity growth rates will be at least as high as 2.9 per cent because the combined weight of telecommunications, gas, electricity and BA was larger than that of the remaining industries at all times since 1968.


was higher than the manufacturing average. The corresponding trend of all the declining industries was lower. Railways (with zero output growth) was, in the 1963–75 period, the exception. The incomplete TFP estimates tend to confirm that observation: with the notable exception of electricity, the growth trends of the expanding nationalised industries were higher than the trend in manufacturing.

The first study by Pryke\textsuperscript{73} covers the 1948–68 period. His second study covers the 1968–78 period.\textsuperscript{74} An extension of the estimates back to 1963 is also provided by the latter study. The results of these studies are summarised in three tables: Table 1.3 is based on the 1948–68 estimates; Table 1.4 shows

\textsuperscript{73} Pryke (1971).
Table 1.5  Productivity: annual average growth rates, 1954–78 (Pryke)\(^1\)

<table>
<thead>
<tr>
<th></th>
<th>Output %</th>
<th>Output per man-hour %</th>
<th>Output per unit of capital and labour %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public airlines</td>
<td>11.2</td>
<td>8.0</td>
<td>6.0</td>
</tr>
<tr>
<td>Telecommunications (1963–78)</td>
<td>8.7</td>
<td>7.7</td>
<td>5.1</td>
</tr>
<tr>
<td>Electricity(^2)</td>
<td>5.4</td>
<td>6.6</td>
<td>2.2</td>
</tr>
<tr>
<td>Gas</td>
<td>4.2</td>
<td>5.9</td>
<td>1954–68 only(^3)</td>
</tr>
<tr>
<td>BRS–NFC</td>
<td>–1.5</td>
<td>3.0</td>
<td>na</td>
</tr>
<tr>
<td>Railways</td>
<td>–1.7</td>
<td>1.9</td>
<td>1954–68 only(^4)</td>
</tr>
<tr>
<td>Coal</td>
<td>–3.4</td>
<td>1.7</td>
<td>0.6</td>
</tr>
<tr>
<td>British Steel (1968–78)</td>
<td>–3.0</td>
<td>–0.2</td>
<td>–2.4</td>
</tr>
<tr>
<td>Postal services (1963–78)</td>
<td>–0.9</td>
<td>–0.9</td>
<td>na</td>
</tr>
<tr>
<td>Nationalised buses</td>
<td>–3.3</td>
<td>–1.1</td>
<td>1968–78 only</td>
</tr>
<tr>
<td>Total manufacturing(^5)</td>
<td>2.1</td>
<td>2.8</td>
<td>1.8</td>
</tr>
</tbody>
</table>

Notes:
1. The spliced series are not affected in any important respect by our changing the initial year from 1948 to 1954. The change has been done simply because 1954–79 is the period this study is interested in.
2. The above TFP estimate of 2.2 per cent per annum can be reconciled with the 1.7 per cent obtained by NEDO if we consider that TFP growth in the electricity industry slowed down during the 1963–68 and 1972–78 periods.
3. Average TFP growth in the 1954–68 period: 2.4 per cent per annum.
4. Average TFP growth in the 1954–68 period: 1.3 per cent per annum.
5. TFP growth in manufacturing was fastest during the 1958–68 period. Thus, the above estimate of 1.8 per cent per annum is compatible with the (1960–75) estimate of 2.3 per cent per annum.

The results for the 1968–78 period; Table 1.5 covers the 1954–78 period. Table 1.5 was obtained by splicing together Pryke’s 1948–68 and the 1968–78 index number series in 1968. The output and productivity statistics shown in the three tables are annual average growth rates calculated by the standard compounding formula.

Tables 1.3–5 confirm the observations I made with regard to the estimates of the NEDO study.

- Labour productivity growth in the public enterprise sector was above the manufacturing average in both the 1948–68 and the 1968–78 periods.
- There were wide variations in performance within the public sector. Labour productivity growth in some nationalised industries was way above the manufacturing average while in others it was way below it. The same picture emerges from the TFP growth estimates.
The association between output and productivity growth is equally clear. All the expanding nationalised industries recorded labour productivity growth rates higher than the manufacturing average. With the exception of the National Freight Corporation, the declining ones recorded rates lower than the manufacturing average. The TFP estimates for the long (1954–78 period, Table 1.5) are more unequivocal than the corresponding NEDO estimates. The electricity industry is no longer an exception: in the long run its TFP growth rate is higher than that of manufacturing. Hence, all the expanding nationalised industries show above-average TFP growth rates. Again, output growth emerges as a good predictor of whether productivity growth was higher or lower than the manufacturing average.

Commentary

My first comment is that not much can be inferred from the data presented so far. The rate of technical progress and the scope for exploitation of scale economies are unevenly distributed among industries. Also, the rate at which organisational slack changes varies across industries. Consequently, some industries have a higher inherent potential for productivity growth than others.

It can be plausibly argued that the public industries which achieved higher productivity growth than manufacturing did so because of the opportunities offered to them by technology or other factors. It can also be argued that under a different ownership regime their productivity record could have been even better. An argument symmetrical to the above can be made about nationalised industries that recorded low productivity growth. Below average productivity growth may have simply been a reflection of fewer opportunities.

The productivity growth data presented so far are compatible with two alternative scenarios.

1. The first scenario consists of three working hypotheses.

   1. The public industries that recorded higher-than-average productivity growth rates had actually failed to seize many of the opportunities offered to them. Yet, these opportunities were so abundant that even a partial exploitation of them resulted in higher-than-average productivity growth rates.

   2. The public industries that recorded lower-than-average productivity growth rates also failed to achieve their potential for productivity growth. The difference was that the potential for growth was lower because of the fewer opportunities available to them.
3. The recorded productivity growth of all the nationalised industries was, more or less, uniformly below their potential. A case can be made that private ownership would have improved the industries’ performance.

The second scenario also consists of three working hypotheses.

1. The faster-than-average productivity growth of the public sector’s high performers was an indication of a genuinely good performance. It suggests that these industries had seized most of their opportunities. As a result, they have acquitted themselves creditably in comparison even to the most dynamic industries of the private sector. Indeed, it is the productivity record of the dynamic private sector industries during the 1954–79 period that does not inspire confidence to the proposition that a different ownership regime would have led to an improvement.

2. The low productivity growth of the weak performers was not a simple reflection of fewer technological (or other) opportunities. Their recorded growth was considerably below their potential. The public sector’s weak performers tended to be declining industries. One of their most pressing objectives was to slow down the rate of the reduction of their capacity. This objective proved to be a major inhibiting factor to productivity growth commensurable to their potential.

3. The recorded productivity growth of the public industries was not uniformly below their potential. There is a clear dichotomy between the performance of the expanding and that of the declining public enterprises.

The validity of the two scenarios cannot be established directly because nobody knows the optimal potential for productivity growth of any industry. The problem is whether there are ways of deducing from more limited information which scenario is the most plausible.

Such an investigation is clearly justified. The data presented above indicate that the difference of the productivity growth of the expanding state industries from the manufacturing average was intriguingly large. There is also evidence indicating that the scope for improvements was considerably greater in the low productivity growth public enterprises. A number of inquiries and international comparisons support the proposition that the scope for improvements was greatest in the British steel, coal and rail industries.75 For example, it has been discovered that, in the 1970s, labour productivity in British Steel’s

75. Molyneaux, R. and Thompson, D.: ‘Nationalised industry performance: still third rate?’, Fiscal Studies, Institute for Fiscal Studies, 8(1), February 1987. See in particular the passages referring to British Rail (p. 60), British Steel (p. 62) and coal (pp. 65–67).
plants was between one-third to one-half of the level achieved in comparable European plants. By 1983–84, the corporation’s annual accounts figures showed that output per man-year in British Steel was higher than that of France or Germany. No improvements of comparable magnitude have been proposed for the electricity, gas and telecommunications industries. These indications suggest that the second of the above scenarios cannot be rejected as implausible out of hand. The questions it raises justify further probing of the evidence about intertemporal productivity growth. Yet, no such further probing has taken place.

International productivity comparisons may open another avenue for the investigation of the issues raised by our two scenarios. This avenue has not been explored systematically either. To be sure, some international productivity comparisons have been undertaken sporadically. Most of them discovered that there was a positive (and often large) productivity gap between the UK public enterprises and their counterparts abroad. These comparisons have a serious problem which has been clearly expressed by Vickers and Yarrow:

The major problem with these international comparisons is that it is not clear to what extent the observed productivity variations can be attributed to the effects of different types of ownership. Over the relevant periods, most studies of international productivity differentials have shown the UK lagging behind its principal competitors irrespective of whether the industry was privately or publicly owned. The question of interest is whether or not the UK’s relative performance is worse when the British industry is nationalised, and most investigators have simply failed to address this more fundamental issue.

They conclude: ‘For the most part, the available evidence is extremely limited and uninformative’. The present book aims to fill some of these gaps.

1.6 SELECTING A SAMPLE OF INDUSTRIES

1.6.1 Selection Criteria

Comparisons of the public industries’ productivity growth rates with the rate for manufacturing cannot shed light on the questions raised by the two scenarios presented in the last section. The productivity growth rate for manufacturing is a composite average that includes many labour-intensive, decentralised industries where scale economies are minimal. It might be misleading to compare an average growth rate partly determined by those

76. See relevant sections in Molyneaux and Thompson (1987).
industries with the productivity growth of the public corporations. Moreover, these industries are not relevant to our problem as we have defined it: our concern is to compare the productivity record of the large-scale economies/capital-intensive/centralised industries of the public sector with similar industries in the private sector.

Finally, the manufacturing average says nothing about the dispersion of the productivity growth rates of the individual industries. The interesting question from our viewpoint is to see how the high productivity growth public industries compare with the most dynamic industries of the private sector. Alternatively, we are interested to see how the weak performers of each sector compare with one another. Thus, comparisons with the manufacturing average have to be abandoned altogether.

My approach is to select individual industries from both sectors according to a set of three criteria: a number of private and public sector industries sharing as closely as possible three specified common characteristics will be selected. The productivity record (intertemporal and in comparison with the US) of these two groups of industries will, then, be subjected to simple statistical tests.

I have already proposed two of the selection criteria: large indivisibilities and capital intensity. The industries belonging to the manufacturing, utility, transport and communications sectors will be ranked according to two proxy indicators: one reflecting the size of the indivisibilities in each industry and the other the degree of its capital intensity. The industries located below the median in either of these orderings will be rejected.

The reasoning behind the choice of the third criterion is the following: as we have seen, the productivity growth of the public sector’s high performers was much faster than that of manufacturing and the correlation between productivity and output growth was strong. These observations gave rise to the first question posed by our two scenarios: was the public sector’s high performers’ productivity growth so much faster than the manufacturing average because they were moving close to their potential or despite their failure to do so?

My way of approaching this question was to select from both the public and the private sectors the industries that had the best chance to show fast productivity growth. This will show whether the superiority of the public firms’ performance (relative to the manufacturing average) disappears once they are compared with the most dynamic industries of the private sector. The problem was how to select the industries that were most likely to show the highest productivity growth rates.

This problem was resolved by selecting the industries that have shown the fastest long-term market expansion for their products. The justification of market expansion as a selection criterion rests on an empirical regularity first
observed by Fabricant (1942) and confirmed by a number of authors. According to this regularity, there is a significant positive association between output and labour productivity growth.78 This association is (as we have seen) at least as strong among the public sector industries as it is among the private sector ones. Furthermore, the evidence suggests that this correlation is, usually, even stronger among the fastest-growing industries. Among the slowly growing or declining industries the relationship between output and productivity growth is more complex and unpredictable.79 The implication of all this is that the industries that have shown the relatively faster expansion were the ones that were most likely to have shown the faster productivity growth.

Thus, market expansion becomes our third selection criterion. As with the other two criteria, an indicator of market expansion will be used to produce an ordering of 155 industries and those ranked below the median will be excluded. The final sample of industries this study will focus upon will consist of the industries that combine the three common characteristics: fast market expansion, large indivisibilities and high capital intensity.

The two scenarios presented in the last section pose a second question: is it true that the declining public industries performed below their potential? This question will not be dealt with in this book. The study will focus exclusively on the expanding segment of British ‘heavy’ industry. It is designed to investigate only the first question of our two scenarios: how does the productivity record of the expanding public industries compare with the record of the expanding ‘heavy’ industries of the private sector?

The sharp distinction between expanding and declining state industries and the exclusive focus on the former requires some additional explanations.

### 1.6.2 Expanding and Declining State-controlled Industries

The British experience from the 1954–79 period suggests that such a distinction is legitimate. We have seen the dichotomy between the expanding and the declining state industries’ productivity performance. All the expanding state-controlled industries recorded productivity gains much higher than the manufacturing average. The state industries that were confined by law to declining industries recorded (with one exception) below-average productivity growth. A closer examination of the declining industries also reveals that

---


their productivity record was uneven and erratic. Periods of relatively fast productivity growth tended to be followed by periods of slow or negative growth.\textsuperscript{80}

This dichotomy extends to other aspects of the public enterprises’ record:

- The expanding state industries (telecommunications, gas, electricity and airlines) were generally profitable.\textsuperscript{81} The declining ones were making systematic or recurring losses.\textsuperscript{82}
- The prices of gas, telecommunications and airlines increased at much slower rates than the retail and wholesale price indices. The price of electricity moved along a path close to the above economy-wide averages. In contrast, the prices of coal, steel, the bus services and the retail component of the railways’ prices increased faster than the relevant averages.\textsuperscript{83}
- The expanding state industries were, normally, offering relatively high job security.\textsuperscript{84} The declining ones were suffering large and continuous job losses.\textsuperscript{85}
- The number of industrial disputes and the days lost because of them was much smaller in the growing public industries than in the declining ones. With the exception of 1973 (the year of the gas strike), the growing nationalised industries lost through industrial action fewer days per 1000 workers than the manufacturing sector. The industries in which the days lost (per 1000 workers) were consistently above the manufacturing average were coal and steel.\textsuperscript{86}
- Pay seems to have been the only area where the dichotomy was absent:

\textsuperscript{80} See Tables 1.2 to 1.4, and Table 1.6 that will be shown below.
\textsuperscript{81} Their rates of return were modest by the standards of private industry. However, gas, electricity and telecommunications invariably recorded positive before interest profits. See: Pryke (1971), Table 21 and Pryke (1981). Their profits were normally higher than their interest payments. The only period during which the three industries made (after interest) losses was the period of government imposed price restraint (1970–75). See: gas, electricity and post-office annual reports. The airlines made overall losses in the late 1950s and early 1960s.
\textsuperscript{82} British Rail was recording systematic before-interest deficits. Before-interest losses were a recurring theme in coal and steel. Even when the last two industries were making (before-interest) profits, these profits were insufficient to cover their interest payments. See: Pryke (1971, 1981) and Allen, K.: 'The coal industry', in Reid, G.L., Allen, K. and Harris, D.J. (eds): The Nationalised Fuel Industries, Heinemann, London, 1973.
\textsuperscript{84} There was an almost uninterrupted increase in employment in airlines and telecommunications. Employment was stable for most of the 1954–79 period in the water and electricity industries while it was falling gradually in the gas industry. There were two exceptional periods, however: 1967–74 for gas and 1968–72 for electricity were periods of very rapid changes in their technological infrastructure. The changes caused big job losses and an increase in tension. See NEDO, Background Paper 4: ‘Manpower and pay trends’ (1977).
\textsuperscript{85} The magnitude of the job losses is given in NEDO, Background Paper 4 (1977).
\textsuperscript{86} NEDO, Background Paper 4 (1977).
the pressure for pay increases did not seem to vary between expanding and declining industries.87

The above differences indicate that there is a behavioural asymmetry between the expanding and the declining public sector industries and that expansion is the key factor in that asymmetry. The reasoning behind the sharp distinction between expanding and declining state industries is the following:

1. **Public enterprise in declining industries** Structural decline is in effect a problem about irreversible reductions of productive capacity. For a public enterprise this involves not only the choice of the final level of capacity society is willing to sustain, but also the pace with which the excess capacity will be reduced. In the end, the problem is financial. It concerns the scale of the financial transfers that society is willing to accept with respect to: (a) the final position it has decided to sustain (usually a break-even position); (b) the deficits arising during the transition period; and (c) the costs related to the process of adaptation (including the costs of workers’ retraining and other social and macroeconomic costs).88 These decisions ultimately depend on what level of financial transfers the electorate is willing to accept.

The UK experience suggests that slowing down the rate of capacity reduction subject to a maximum loss constraint was one of the fundamental goals of the declining state industries. Yet, the conflict between the desire to arrest the pace of the decline and the industries’ statutory obligation to avoid permanent financial losses, proved to be effectively irreconcilable. As a result, no genuine consensus about objectives was feasible among the industries’ stakeholders. Instead, a compromise about the pace of decline tended to be imposed by the government of the day. This compromise could not be expected to be stable. It was liable to be

87. During the 1960s, the average weekly earnings in the nationalised industries were, generally, a bit lower than the all-industry averages. However, they grew faster and, by 1975, they had overtaken the all-industry average earnings. This was mainly a reflection of the big pay increases in the coal industry. These trends do not seem to be related to the growth rates of output and productivity of the nationalised industries concerned. See NEDO, Background Paper 4 (1977).


Introduction

47

put into question as soon as a change in the economic environment occurred or as soon as a new government came into office.

In such conditions, the productivity record of the declining public industries was bound to be erratic. During periods of fast reduction of excess capacity a large number of loss-making factories, collieries or railway routes were taken out of commission. These were the units where productivity was lowest. Their closure pulled the industries’ productivity averages up and the statistics show large productivity gains.\(^8\)! The opposite tended to happen in periods in which there was an effort to arrest the pace of decline. Productivity growth was depressed because low productivity units were kept in operation. The desire to preserve capacity tended to slow down the rate of mechanisation of the viable units. And the workforce tended to resist the introduction of labour-saving production methods.\(^9\) The effect of the slow growth periods was

\(^8\) In the 1978–85 period, steel and coal recorded productivity gains far in excess of those achieved by other industries (see Table 1.6).

\(^9\) See Allen, in Reid et al. (1973).

Table 1.6  Productivity trends, 1978–85: annual trend percentage rates (%)

<table>
<thead>
<tr>
<th>Output per head %</th>
<th>Total factor productivity %</th>
</tr>
</thead>
<tbody>
<tr>
<td>British Steel</td>
<td>12.6</td>
</tr>
<tr>
<td>Public airlines</td>
<td>6.6</td>
</tr>
<tr>
<td>Telecommunications</td>
<td>5.8</td>
</tr>
<tr>
<td>Coal</td>
<td>4.4</td>
</tr>
<tr>
<td>Electricity</td>
<td>3.9</td>
</tr>
<tr>
<td>Railways</td>
<td>3.9</td>
</tr>
<tr>
<td>Gas</td>
<td>3.8</td>
</tr>
<tr>
<td>Postal services</td>
<td>2.3</td>
</tr>
<tr>
<td>Nationalised buses</td>
<td>2.1</td>
</tr>
<tr>
<td>Total manufacturing</td>
<td>3.0</td>
</tr>
</tbody>
</table>

Source: Molyneaux and Thompson (1987), Table 3, p. 59.

The 1978–85 developments seem to be at variance with the almost perfect association between output and productivity growth we observed during the previous 25 years. In fact, these developments were part of the same recurring pattern. The large productivity gains in British Steel and Coal were mostly the result of massive cuts in capacity. The closure of the low-productivity steel plants and coal mines and the concentration of production in the most modern ones pulled the industry average upwards. Extensive rationalisations of the declining public enterprises have taken place in the past. The most prominent of them were the rationalisations of the railway and coal industries in the 1960s. Their effects on productivity growth were also significant. See the NEDO estimates of the railways’ productivity growth in the 1960–75 period.

The distinctive feature of the 1978–85 period was the severe tightening of the financial constraints of the declining industries. This was a reflection of a possibly permanent change in the political preferences of the British electorate. These attitudes coupled with the increasing tendency of the financial system to penalise large government budget deficits were the truly profound changes of that period.
to depress the long-run average productivity growth rate below the manufacturing average. The important point is that the slow long-term productivity growth of the declining public industries was, partly, the direct result of the objectives they pursued. It follows that, in the case of these industries, productivity may not be a suitable vehicle for performance comparisons with the private sector: it may not be legitimate to use it to evaluate the performance of an industry whose objectives may involve the deliberate retardation of productivity growth.91

2. Public enterprise in expanding industries

The management of growth poses entirely different problems to a state enterprise than does the management of decline.

First, the UK experience suggests that expansion tended to attenuate the intensity of conflicts of interest among the industry’s stakeholders. All the interested parties could derive benefits from keeping the industry along a fast growth path. Given the relative paucity of strong opposing pressures, the interests of the consuming and tax-paying public tended to become the priority for the government. Ministers and managers alike had strong motives to strive to satisfy the expanding demand and deliver the lowest prices that were compatible with the enterprise’s profit target. Thus, expansion tended to create favourable conditions for the attainment of a consensus around a policy based on commercial cost efficiency.

Of course, consensus around a commercial cost-efficiency strategy did not always prevail. There were stakeholders’ interests that — through their influence on governments — caused (often expensive) departures from such a strategy.92 The hypothesis here is that, in the expanding industries, these deviations were confined to specific policy areas and tended to be contained by countervailing influences.93 Furthermore, these deviations did not reflect deliberate attempts to slow down productivity growth. Thus, in the case of the expanding state enterprises, productivity is an acceptable indicator for performance comparisons with the private sector.

91. The productivity statistics for the industry as a whole cannot tell us to what extent the slow productivity growth was due to lack of technological opportunities (or sheer inefficiency) and to what extent it was the result of a deliberate effort to preserve capacity.

92. Probably, the most important cause of departures from commercial principles was the preference towards domestic suppliers. The public corporation was supposed to show a strong preference towards the domestic industry and disregard — to an extent — cost and performance disadvantages. The ‘buy British’ aircraft procurement policy of the public air corporations in the 1950s and 1960s and electricity’s preference for British coal and a British design of nuclear power stations were manifestations of such phenomena.

93. The public airlines were forced to abandon their unconditional support to the domestic aircraft industry and the electricity industry modified its nuclear power station programme of the 1970s.
Second, an expanding public industry has to prepare itself to meet the growing demand. Hence, the design of its investment strategy is one of its top priorities. I have argued that public enterprises may have a possible advantage in that area: they are free from the stock market pressures that lead to myopic investment behaviour. If such an advantage exists, its effects on productivity growth are more likely to manifest themselves in industries expanding their capacity rather than in ones trying to preserve it.

To summarise, a distinction between expanding and declining public industries is justified. Indeed, treating the public sector industries as an undifferentiated whole may be misleading. A declining public industry is furthest away from the private enterprise model: slowing down the pace of decline emerges as one of its basic goals. This is an objective no private enterprise can afford to pursue. Under such conditions productivity growth may not be suitable for performance comparisons: one cannot legitimately compare industries on the basis of an indicator critically affected by the differences in the goals they pursue. In contrast, the comparison of the productivity records of expanding public and private sector industries is both legitimate and interesting. If the public sector is truly free from short-termist bias, the effects on productivity growth are more likely to manifest themselves in the expanding industries.

The above represents a working hypothesis, not a conclusion. The present study will investigate only one part of this hypothesis: whether the productivity record of the expanding public industries was genuinely good in comparison with the record of the expanding ‘heavy’ industries of the private sector. The hypotheses about the declining industries will not be investigated here.

1.7 UK PUBLIC ENTERPRISE REVISITED: THE PLAN OF THE STUDY

1.7.1 The Object of the Study

The object of this study is to establish, compare and produce a first evaluation of the labour productivity record of a number of public and private sector industries. These industries were selected according to a set of three criteria. All the comparisons involve industries and not firms.

My aim was to view the productivity record from a long-run perspective. To do so I have selected the longest reference period that was practicable to choose: 1954 to 1979.
Only labour productivity statistics will be produced. For reasons that will be discussed in the next section I have not been able to produce multifactor productivity estimates. This is a major limitation.

1.7.2 Comparisons of Different Industries

The labour productivity comparisons necessarily involve different industries. This raises serious comparability questions. There are considerable variations in the rate of technical progress and the potential for scale economies among industries. Consequently, some industries have a higher inherent potential for productivity growth than others.

The problem is that we do not know the potential productivity growth paths of the various industries. Had we known them we could have estimated the extent to which each industry’s actual growth path converges to or diverges from its potential productivity growth path. The deviations between actual and potential productivity growth paths could provide a legitimate basis for interindustry comparisons. The various industries could have been compared according to the degree of their convergence to their own potential.

The fact is, however, that only the actual productivity growth trends are observable. Comparing the actual rates of an industry’s productivity change with the actual rates of other industries can be misleading. For instance: industry A may show a faster actual productivity growth than industry B despite the fact that its shortfall from its potential growth is both large and increasing over time. This happens because the rate of technical progress in industry A is so fast that even a partial exploitation of the opportunities offered by new technology is enough to ensure that its productivity growth is higher than that of industry B.

I tried to mitigate the severity of the incomparability problem in two ways. First, I narrowed the field of my inquiry by concentrating on particular types of industries. In particular, I tried to concentrate on industries whose potential productivity growth curves were likely to be steep. Second, I compared the UK industries of my sample on the basis of their productivity record relative to that of their US counterparts.

1.7.3 Narrowing the Field: The Selection of the Sample

The field of the inquiry was narrowed by selecting industries that were sharing some common characteristics. The type of industries I wished to focus on emerges from the previous sections.

Public enterprises in the manufacturing, utility, transport and communications sectors tend to be concentrated in industries with particular characteristics:
these are capital-hungry industries involving large indivisibilities and sunk costs. The relevant comparison is, therefore, with private sector industries that share these features. In the context of our inquiry, there is no point in comparing industries dominated by giant companies with decentralised and competitive ones.

The UK experience with public enterprise during the 1954–79 period introduces another distinction. All the expanding nationalised industries recorded productivity growth rates way above the manufacturing average. The corresponding rates of the declining industries were (with one exception) below that average. This study intends to focus on the expanding public industries compare with the growing and presumably most dynamic industries of the private sector.

The type of industries to be selected for our sample are the ones combining three characteristics: fast expansion, large indivisibilities and high capital intensity. This determines the method of selection of our sample. The three characteristics represent the selection criteria. The 155 three-digit industries of the manufacturing, mining, utilities, transport and communication sectors were ranked according to each of these criteria (or suitable proxies to them). The industries qualifying for selection were the ones that were ranked at or above the median of each of the resulting three orderings. The exercise produced three sets of candidates and the final sample was determined by the intersection of those three sets. The final outcome was a sample of 29 industries. Five of them were publicly owned, 24 were controlled by the private sector.

1.7.4 Intertemporal Productivity Comparisons

The next stage is to investigate the intertemporal productivity growth record of the 29 industries. Three-digit-level output and productivity indices covering the entire 1954–79 period were unavailable. So, I had to construct my own indices. The estimates were calculated on the basis of uniform methodological principles; they rely on a single source of data (the Census of Production and the sales inquiries of the 1970s); they reflect the same index number formula; and they make full use of the detailed quantity and value data available from the individual Census reports and sales inquiries.

The output indices were reweighted at regular intervals. Thus, estimates are available both for the entire 1954–79 period and for several subperiods. Both output per employee-hour and output per employee-year estimates are presented. The indices that have been calculated by the gross output per employee-hour formula were taken as the basis for our comparisons. However, an alternative set of estimates derived by deflating
net output value ratios has also been produced to serve as a check upon the main results.\textsuperscript{94}

The 29 industries were ranked according to their productivity growth rates and the emerging orderings were subjected to simple statistical tests. Both the long period (1954–79) and the intervening subperiods were investigated. The basic estimates for the long period indicate that the productivity growth in the public sector industries was significantly faster than that of the private sector ones.

The question is what these results tell us about the two scenarios presented in Section 1.5. (We may recall that the relevant hypothesis of the first scenario is that the state industries recorded high productivity growth rates despite their failure to move close to their potential. The hypothesis of the second scenario is that they achieved high productivity growth because they were closer to their potential than the private industries.) Our results are by no means conclusive. However, they make the former hypothesis look less plausible for the following reasons.

The above results no longer involve comparisons of the public sector’s high performers with the manufacturing average. They involve comparisons with specially selected individual industries. Indeed, the method of our sample selection focuses our inquiry upon a class of public and private industries whose potential for productivity growth was likely to be high. The fact that the actual productivity growth of the public firms was faster than that of most of the private sector’s high performers can be reconciled with the hypothesis that this happened despite their failure to seize their opportunities in two ways: either, by assuming that the opportunities offered by technology (or other factors) to the public industries were such that their potential for productivity growth was systematically much greater than that of the private industries,\textsuperscript{95} or, that their superior record was achieved by massive substitution of capital for labour.

Given that we are comparing the dynamic industries of the two sectors, the first possibility becomes more difficult to sustain. There is no a priori reason to imagine that the potential for productivity growth was systematically favourable to the public industries. Of course, it is by no means impossible that this hypothesis is true. It can still be argued that there were factors (for example, the rate of technical progress) so favourable to the public industries

\textsuperscript{94} Fisher indices were used throughout but the effects of changes in the weights were small.

\textsuperscript{95} Alternatively, we may assume that the private sector industries themselves were failing to move close to their potential but their failure was less severe than that of the public industries. This assumption also boils down to a hypothesis of a systematically favourable potential for the public industries. Otherwise the latter’s faster actual productivity growth is inconsistent with the hypothesis of the first scenario.
that they managed to show a superior record despite their failure to seize some of their opportunities.

The second possibility (of massive capital deepening) cannot be properly addressed by the results of this study. To do so we need multifactor productivity estimates.\footnote{96}{The concluding chapter presents some information about multifactor productivities gathered from various sources.}

1.7.5 US–UK Productivity Comparisons

This brings us to the second method of attacking the comparability problem: the international productivity comparisons. The strategy is that a yardstick country is selected. This country is the US. For each industry we calculate a sequence of four direct US–UK productivity ratios. These ratios normally span a period that begins in 1954 and ends in 1977. Each US–UK productivity ratio represents the absolute size of the labour productivity gap between the two countries for a particular industry in a given year. By taking the ratios of the productivity gaps in different years we can examine the evolution of each industry’s gap over time. Thus, we can ascertain whether the public sector industries narrowed their deficiency with the US at faster rates than their private sector counterparts. We can further investigate whether these rates were significantly faster or slower than those of the private sector industries.

Before I proceed I must add a few words about the use of the US as a yardstick. In many ways the American industry is ideal as a benchmark for international comparisons:


   On the other hand, although the US productivity level was and remained very high, the rate at which it has grown in the subsequent three decades was slow in comparison to most of the other industrialised countries.\footnote{98}{See: Baumol, W.J., Batey-Blackman, S.A. and Wolff, E.N.: Productivity and American Leadership: The Long View, MIT Press, Cambridge MA, 1991, ch. 5; Maddison, Angus: Phases of Capitalist Development, Oxford University Press, 1982, ch. 5; and Maddison, Angus: Dynamic Forces in Capitalist Development, Oxford University Press, 1991.} As a result, most of America’s competitors had a chance to close part of their productivity gap with it. Both the undisputed American leadership in labour productivity and the fact that it represented a relatively slow moving target are useful fea-
tures. Indeed, we may argue that the US productivity record is the closest approximation to the unobservable potential productivity growth paths we could get.

2. There is an abundance of statistical information available both from government and private sources. The coverage and detail of the data is often remarkable by the standards of any other country.

3. The production structure of the US economy is the most diversified in the world. Anything that was being produced in the UK was likely to have had a close counterpart in the US.

Again, the novelty of this study is that it produces for each industry a consistent sequence of direct comparative productivity estimates. These ratios have been measured on the basis of the same concept and the same index formula. The coverage of the variables is identical throughout the years and the definitions of the industries under comparison remain unchanged. Finally, for each individual industry, the same estimations methods have been applied in all four years of comparison.

For reasons that will be explained, the deflated net output index formula was considered as more suitable for international comparisons. The Fisher version of the estimates derived by this formula form the basis of the comparisons and of the inferences derived from them. However, gross output per employee estimates are also presented as a counterpoint to our basic results. Finally, it must be noted that only output per employee-years estimates are offered in the case of the international comparisons.

The industries were ranked both according to the size of the labour productivity gap in the various years and according to the rate the gap changed in the long and shorter periods. Simple statistical tests were used to evaluate the information given by all those rankings.

The international productivity comparisons are presented in Chapter 4. The interesting thing about them is that we no longer compare different industries directly. Instead, the comparisons are made in two stages. The first stage involves comparing a UK industry with the same industry in a country that is as good a proxy to the potential best practice as any. In the second stage the UK industries are compared according to their performance in relation to their counterparts in the reference country.

Is the productivity record of the US industries a good enough proxy for the unobservable and unfulfilled potential of the British industries? The answer is yes and no. On the one hand, American productivity is in many ways an imperfect guide as to the potential best practice of industries that operate in Britain. Both the size and the composition of output are different in the two

99. Again, the effects of the changes in formula and weights structures are small.
Introduction

countries’ industries; the relative prices of capital and labour and the institutional and cultural environment are also different. On the other hand, the industries compared in the first stage are the same. Knowledge about technology and the potential for catching up are open to the industries of both countries. As a result, the force of the systematically different technological opportunities argument can be substantially strengthened or weakened by the US–UK comparisons. An industry failing to exploit its opportunities is not likely to be closing its productivity gap with the US (or, at least, not at a rate as fast as other industries).

1.8 THE LIMITATIONS OF THE LABOUR PRODUCTIVITY INDICATOR

In many ways, the purposes of this study would have been better served by multifactor rather than labour productivity comparisons. Yet, I decided against that idea. The calculation of multifactor productivity (MFP) indices for three-digit industries in the 1954–79 period presents formidable problems. The inadequacy of the available data is the most immediate and glaring one. Most of the information required is not available at the appropriate level of disaggregation. Hence, one has to resort to extensive use of estimates that are bound to cause large measurement errors. This, in turn, undermines the credibility of the MFP results. Below, I shall give an account of the technical difficulties involved.

The estimation of MFP growth typically involves the calculation of a residual: the difference between the growth of output and the growth of total input. Whatever the method one chooses to adopt, the calculation of MFP requires the estimation of levels and rates of change of capital stock and rates of change of intermediate inputs in real terms. The data available for these purposes are inadequate.

1. The estimation of the capital stock series of three-digit industries

Capital stock series are typically estimated by the Perpetual Inventory Method. The estimation of the capital stock series of three-digit industries is typically estimated by the Perpetual Inventory Method. The application of this method requires: (i) continuous annual time series

100. There are several ways of arriving at multifactor productivity estimates. See Baumol et al. (1991), ch. 11.


of gross investment in current prices; (ii) appropriate indices of capital goods prices with which to deflate the investment series; (iii) knowledge about the economic lives of the various assets involved; and (iv) a method of estimating depreciation. The gap between what is required and what is available is large.

- To obtain capital stock estimates for the 1954–79 period one needs annual gross investment series starting decades before 1954. Such continuous series do not exist for three-digit industries. At the three-digit level, gross investment data became available on an annual basis from 1970 onwards. In the 1954–70 period, gross investment statistics covering all three-digit industries are available only for 1954, 1958, 1963 and 1968 (the Census years). For the 1948–54 years, the 1948, 1949 and 1951 Censuses provide data for most but not all three-digit industries. The only investment data we have for the non-Census years of the 1948–70 period refer to sectors (that is, the two-digit-Order level) and not to individual industries. Prior to 1948, investment data of the type we are concerned with here do not exist at all.

There have been two attempts to estimate industry investment figures for the missing years of the 1948–70 period by regression methods. There is little doubt that the estimates for the missing years contain serious measurement errors. The estimated annual series for the years before 1948 are rather speculative and the errors are bound to be even more serious. Thus, the capital stock estimates that are based on the pre-1948 investment series (that is, the ones for the earlier years of the 1954–79 period) cannot be expected to be more than ‘reasonable guesses’.

- The available capital goods deflators are the following. For the 1956–79 period we have: separate deflators for the plant and machinery of ten industry groups in manufacturing; one deflator for land and buildings and one for vehicles. Before 1956, we have only one deflator for the investment in plant and machinery of the entire manufacturing sector. All the deflators were unpublished and they were not easily accessible.

103. One possible problem is that some of the Census years (on whose observations we rely to get the estimates of the missing years) may be strongly untypical. For instance, 1958 was the year of the deepest recession of the 1950s: investment in the highly cyclical industries may have been distorted. The immediate post-war Census years (1948, 1949 and 1951) may also be untypical due to the heavy restrictions investment was subject to at the time.
The ten plant and machinery deflators we have for the 1956–79 period refer to industry groups at the two-digit level of aggregation or higher. The plant and machinery investment figures of the individual industries have to be deflated by the deflators of the group they belong to. These deflators can be totally inappropriate and they may cause fatal errors. The situation is obviously worse in the pre-1956 years.

- The information about asset lives is rather speculative.
- The choice of a depreciation formula (for example, straight line or geometric) involves some degree of arbitrariness.

The conclusion is that the estimation of capital stock of three-digit industries is likely to result in layers upon layers of errors built into the estimates. There is no reason to assume that these errors will cancel each other out.

2. Intermediate inputs

The Censuses supply far less detailed data on intermediate inputs than they do for outputs. The usual practice is to provide quantity and cost statistics for the basic raw materials and fuels used by an industry and subsume the remaining materials, components and so on under broadly defined headings (often entitled ‘other … ’ or ‘miscellaneous’). As a consequence, the computation of an input index requires a larger number of sweeping assumptions and arbitrary guesses than the gross output index. That causes more serious measurement errors.

The potentially large errors of the capital stock and intermediate input components have a cumulative effect upon the variance of the measured MFP values. This would have undermined the credibility of the multifactor productivity results. The errors involved in the MFP estimates would have been particularly catastrophic in the case of the present study where the sample we have to deal with is small. Serious systematic errors in a small number of industries can cause maximum damage. For these reasons I concluded that the limit of what I could do was to produce indicators of output per undifferentiated units of labour time.

105. For example, the only thing that the plant in the electricity-generating machinery industry has in common with that of the electronic components is a classificatory accident. Yet, both industries belong to the electrical engineering sector and they have to be deflated by the same deflator.

106. Before 1983, there was a consensus among experts that the Central Statistical Office’s assumptions about asset lives were too long. In 1983, the assumed asset lives were shortened at a stroke. This creates some confusion as to the point at which the shorter asset lives assumptions became appropriate.

107. See Appendix D, Section D.2.1.
Interpretation of the Results

It is important to avoid misinterpretations of this study’s results. Our labour productivity estimates should not be interpreted as measures of the efficiency with which public and private sector industries have used their inputs. Labour productivity is a partial indicator and it can be misleading as a measure of efficiency. Our labour productivity comparisons can (if combined with information taken from other sources) lead to informed speculation about the efficiency of the industries concerned. No further claims can be made about them.

Our productivity estimates should not be misinterpreted as measures of the contribution of labour to the outcome of the productive process either. Labour productivity reflects how much output an industry is able to produce with a given amount of labour resources. Whether this ability to produce can be attributed to the skills of the industry’s labour force, the sophistication of its machines or the ingenuity of its organisation, the labour productivity indicator does not say. Labour productivity measures the results that the human participants of an industry can accomplish regardless of how they accomplish it.

The proper interpretation of this study’s results follows from the last remark. An increase in a country’s ability to produce for a given amount of labour resources is the necessary condition for an increase in the living standards of its population. Without it no increase in rewards is sustainable. An industry’s labour productivity growth represents the industry’s contribution to the ability of a country to increase output for a given amount of labour resources. This is the basis for the proper interpretation of our labour productivity results. Each estimate is a measure of an industry’s contribution to the potential changes in the country’s (as well as of its own labour force) standards of living. The intertemporal results reflect the capacity for improved living standards over time. The US–UK results reflect the capacity for improvements in the UK relatively to the US.

1.9 A CHAPTER BY CHAPTER OUTLINE

The layout of the book is the following.

Chapter 2 discusses the method by which the sample of industries the study focuses on has been selected. In particular, it explains how the selection criteria have been specified and why. Appendix A contains the technical details of the sample selection procedure.

In Chapter 3 the intertemporal productivity growth results are presented and the growth records of the public and private sector industries are com-
pared and evaluated. Appendices B and C explain the methods by which the intertemporal output and employment indices have been estimated.

Chapter 4 presents the results of the US–UK productivity comparisons and provides an evaluation of the performances of the public and private sectors. Appendix D explains the methods used to arrive at the US–UK productivity comparisons.

Chapter 5 summarises the results of the previous two chapters and offers some tentative suggestions about the possible causal relationships that lie behind them.